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ABSTRACTS

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ABSTRACTS

(The titles which are set in bold-face are intended as "scanning titles" for ease in classifying and filing. Where these are not substantially the authors' titles the exact titles are set in parentheses.)

1—FIBRES AND THEIR PRODUCTION

(B)—ANIMAL

Hornless Dorset Horn Sheep. E. A. Elliott. *Agric. Gaz. N.S. Wales*, 1950, **61**, 567-568. At Temora Experiment Farm the New South Wales Department of Agriculture is crossing Ryeland with Dorset Horn breeds, in an endeavour to retain the valuable characteristics of the Dorset Horn, with the exception of the horns; spring mating of Dorset Horn is an important factor of the experiment. W—**1B**.

Merino Characteristics: Relationship between. D. J. Louw, N. G. Wessels, F. J. Labuscagne and D. F. Badenhorst. *Fmg. in S. Africa*, 1950, **25**, 363-369. Observations are recorded on 170 merino hamels which were given the same treatment for a year on the same veld. Data are given on the relation between frontal development and the following characteristics:—quantity, condition, quality and length of wool; average wool production per sheep; crutch folds; grade of mutton; weight of sheep. There was no obvious relation between fineness and staple length of wool and no correlation between the weight of a sheep and the weight of its wool. W—**1B**.

Sheep: Control of Body Strike. *Agric. Gaz. N.S. Wales*, 1950, **61**, 557-559; *Pastoral Rev.*, 1950, **60**, 1208-9. Interim recommendations of the Joint Blowfly Control Committee, appointed by the Commonwealth Scientific and Industrial Research Organization, the New South Wales Department of Agriculture, and the Queensland Department of Agriculture and Stock. For preventing body strike, spray from poll to rump with 1·0 per cent. DDT or 0·05 per cent. BHC, preferably with DDT. For treating body strike, jet with 0·05-0·1 per cent. BHC. No recommendation is made on the use of insecticidal fogs. W—**1B**.

Sheep: Insectary Tests with Insecticides to Protect Against Body Strike. D. F. Waterhouse and M. T. Scott. *Australian J. Agric. Res.*, 1950, **1**, 440-455. DDT gave better protection than other insecticides against body strike on sheep. Crude benzene hexachloride (BHC) preparations gave valuable protection when applied at 0·5 per cent. of the γ-isomeride. Intermittent artificial rain did not affect the protection afforded by 1·0 per cent. DDT or 0·5 per cent. BHC over a 64-day period. Chlordane gave some protection, but was less effective than DDT, and chlorinated camphene did not give useful protection. *In vitro* tests indicated that none of the insecticides was ovicidal, but BHC was extremely toxic in larvicidal tests. W—**1B**.

Sheep Scabies: Use of Benzene Hexachloride. *Sheep & Goat Raiser*, 1951, **31**, No. 4, 37. The benzene hexachloride (BHC) dip can be used effectively without heating, and one application usually obtains control of the mites. BHC should be used in a quantity to provide 0·06 per cent. of the γ-isomeride. Since wettable BHC powder is insoluble in water, some mechanical stirring device may be necessary. W—**1B**.

Animal Fibres: The Effect of Climate and Nutrition on. J. L. Stoves, *Fibres*, 1951, **12**, 43-45. The effects of temperature and water on the texture and colour of animal fibres are considered. A review of some of the literature on the effect of nutrition includes references to protein intake, and the influence of hormones, vitamins, and trace elements is discussed. W—**1B**.

Sheep: Competition between Skin Follicles. A. S. Fraser. *Nature*, 1951, **167**, 202-203. Evidence is discussed which supports the view that follicles compete for fibre substrate. The increase in the growth rate of primary fibres is compensated by a decrease in the growth rate of secondary fibres. The decrease per follicle in secondary follicles is smaller than the increase in primaries because the compensation is spread over the more numerous secondary follicles. W—**1B**.

(C)—VEGETABLE

Cotton Cultivation in South-Eastern Ceylon. H. A. Pieris. *Trop. Agriculturist*, 1949, **105**, No. 3, 117-123. An illustrated account is given of the progress of cotton cultivation in south-eastern Ceylon which was re-established in 1947 after a break during the war years. The scheme used for the purchase of cotton from the small native producers is described. C—**1C**.

Egyptian Cotton Crop, 1930-1950. E. Lord. *Egypt. Cotton Gaz.*, 1950, **10**, May, 1-11. Details are given of some of the changes which have occurred in the Egyptian cotton crop over the past 20 years. The first section deals with the rise and fall of different varieties, and in the second section the characteristics of the more important cottons are reviewed on the basis of results of fibre and spinning tests made at the Shirley Institute. C—**1C**.

Egyptian Cotton: Improvement by Breeding. C. H. Brown. *Egypt. Cotton Gaz.*, 1950, **10**, May, 33-37. After referring generally to the evolution of animals as comparison, the writer briefly discusses the further improvement of Egyptian cotton by careful breeding. C—**1C**.

Egyptian Cotton: Response to Manuring. D. S. Gracie. *Emp. Cotton Growing Rev.*, 1950, **27**, 100-118; 177-194. The factors which govern the response to manuring of cotton in Egypt have been investigated by field experiments designed to sample the crop of each season. The number of experiments was approximately 30 per year and the total during the period 1931-1946 was 491. Benefit from fertiliser nitrogen depended partly on its effect in increasing the number of early bolls and partly on the extent to which it was possible to pick late bolls formed as a result of its use. Data are given showing the effect on the response to nitrogen treatment of: climatic variations; seasonal variations; soil quality and properties determining the water intake of the root system; sowing date; locality; previous crops; and superphosphate. Results of determinations of available soil nitrogen are presented and discussed. Finally the practical application of the results of the experiments is considered, and the effects of the various factors summed up. C—**1C**.

Egyptian Cotton: Varietal Changes. W. L. Balls. *Emp. Cotton Growing Rev.*, 1950, **27**, No. 3, 163-171. A forecast of the varietal changes in the Egyptian cotton crops made by the writer in 1939 for a seven-year period, is compared with the actual changes made over that period. The value of the cotton crops between 1925 and 1947 is traced to show the profit obtained from cotton-breeding. C—**1C**.

Empire Cotton Crops, 1939-49. Anon. *Emp. Cotton Growing Rev.*, 1950, **27**, No. 3, 202. Seasonal cotton production figures for each of the cotton-producing countries of the British Empire are tabulated, covering the years 1939-1949. C—**1C**.

Yucca Fibre Cultivation. ("Yuccaanbau und Yuccafaser.") A. T. Czaja. *Melliand Textilber.*, 1950, **31**, No. 3, 160-162. The cultivation of the yucca plant and the production of fibre are discussed. To make production an economical proposition a minimum of 60-80 leaves per plant, each leaf yielding 1·5 to 2 grams finished fibre, is necessary where the density of growth is about 16,000 per acre. C—**1C**.

Harvesting Medic Seed with a Sheepskin Roller. F. W. Hely. *Agric. Gaz. N.S. Wales*, 1950, **61**, 560-562. Varieties of barrel medic burrs with spines of moderate length have been satisfactorily harvested using a hollow wooden roller covered with sheepskin with 1-1½ inch staple. A revolving brush flicks the pods into a collecting box attached to the rear of the machine. W—**1C**.

(D)—ARTIFICIAL

Fibre-Forming High Polymers. R. L. Elliott. *Text. Rec.*, 1950, **68**, October, 85-87. The many types of rayon and synthetic fibres available are surveyed, and it is shown how their properties and suitability for various textile purposes can be largely deduced from a knowledge of their constitution. C—**1D**.

Orlon. ("Une nouvelle Fibre Synthétique: l'Orlon.") J.-P. Niederhauser. *Teintex*, 1950, **15**, 305-325 (11 pages). A brief history of the development of vinyl polymers and copolymers leads to a detailed discussion on the polyacrylonitrile, Orlon. Preparation of the monomer and its polymerisation are described. Solvents for, properties, methods of dyeing and printing, and applications of Orlon are dealt with. 54 references. **C—1D.**

Synthetic Polyamide Fibres: Search for New Polymers. J. A. Somers. *Brit. Rayon & Silk J.*, 1950, **27**, October, 46-47. Continuing his articles[1] on new polymers for fibre formation the author presents further facts on polyamides built up from 4-amino-1:2:4-triazole units. Methods for the preparation of these polymers and for the removal of cross-linkages in the resulting chains are discussed. Dyeing properties of the new fibres are briefly dealt with. Reference is made to relevant patent literature. ([1]For previous article see *J. Textile Institute*, 1950, **41**, A543.) **C—1D.**

Viscose Rayon Production. H. Leitso. *Can. Chem. Process Inds.*, 1950, **34**, 563-567 (through *Amer. Chem. Abstr.*, 1950, **44**, 8641[b]). The viscose process of rayon production is described. **C—1D.**

Viscose Rayon Spinning. ("Highly Polymerized Regenerated Cellulose, Parts VI, VII.") T. Noguchi. *J. Soc. Chem. Ind., Japan*, (1) 1941, **44**, 460-461; (2) 1942, **45**, 27-28 (through *Amer. Chem. Abstr.*, 1950, **44**, 8640[h]). (1) Tests have been carried out on the spinning of viscoses of different cellulose contents and at different stages of ripening. (2) The optimal concentration of sulphuric acid in the regenerating bath has been determined for 21 viscoses differing in cellulose and total alkali content. **C—1D.**

Polyethylene Monofilament Yarn: Production. W. H. Willert. *Modern Plastics*, 1950, **27**, No. 11, 87-90. The processes involved in the production of polyethylene monofilament yarn are described. These cover raw materials and their blending, extrusion, stretching, annealing, and winding. Brief mention is also made of the weaving and finishing of polyethylene fabrics. **C—1D.**

Vicara. C. Z. Draves and H. Lüttringhaus. *Melliand Textilber.*, 1950, **31**, No. 2, 89-90. A general account is given of the manufacture of the zein fibre, Vicara, its properties, and its methods of processing, including spinning, bleaching, and dyeing. Its applications are briefly indicated. **C—1D.**

Amilar. *Hosiery Ind. Wkly*, 1951, **59**, (10), 12. Fiber V, the du Pont fibre corresponding to the British Terylene, has now been given the trade mark Amilar. Note on properties. **H—1D.**

PATENTS

Cellulose Esters: Stabilisation. British Celanese Ltd. B.P.638,316: Appl. and filing 12/9/1947; Publ. 7/6/1950; U.S.A. appl. 13/9/1946. The invention relates particularly to the treatment of cellulose acetate of acetyl content 55-57 per cent. so that the common tendency to "yellowing" on moulding is overcome. The crude, ripened ester, made with sulphuric acid as catalyst, is heated with distilled or demineralised water (equivalent to $CaCO_3$ less than 5 parts per million) containing an anionic or non-ionic wetting agent (for example the polyoxyethylene derivative of sorbitan monolaurate). C.

Polyacrylonitrile Solutions: Production. Rowland Hill, R. G. A. New, S. M. Todd and Imperial Chemical Industries Ltd. B.P.638,331: Appl. 16/1/1948; Filing 14/1/1949; Publ. 7/6/1950. The claim is essentially for a series of simple solvents for polyacrylonitrile, giving solutions that may be extruded to filaments or films by known methods. The solvents mentioned in the 18 examples are β-propiolactone, γ-butyrolactone, succinic anhydride, maleic anhydride, ethylene carbonate, methylene glycollate, and anhydro-carboxy-glycollic acid. One example refers to filaments of tenacity up to 2·3 grams per denier and elongation at break of 8·3 to 12·3 per cent. C.

Regenerated Protein Fibre: Hardening by Means of Synthetic Resins. J. J. Press. B.P.638,356: Appl. and filing 7/10/1946; Publ. 7/6/1950; U.S.A. appl. 11/10/1945. Freshly extruded and stretched protein fibre (from casein, peanut, or soybean) is hardened by forming within the fibre a synthetic resin from formaldehyde and urea, phenol or melamine, or related substances. Six examples are given with particulars of the physical properties of the products and a list of suitable agents for condensing with formaldehyde. C.

Cellulose: Isolation from Wood, Straw, *etc.* J. C. Seailles. B.P.638,496: Appl. and filing 28/8/1946; Publ. 7/6/1950; French appl. 4/2/1941 and 10/10/1941. In a process for obtaining pulp of high α-cellulose content from wood chips, straw, *etc.*, the material is heated at 160° C. (for more than 2 hours) 210° C. (for not more than 1 hour) in the presence of sufficient water to dissolve the by-products, any evolved gases being discharged through a blow-off device or absorbed by an agent (for example, lime), which is located in the digester above the water. Dissolved products may be used for fermentation. C.

Thermoplastic Filament and Yarn Drawing Apparatus. T. H. Farrand and Imperial Chemical Industries Ltd. B.P.638,671: Appl. 30/5/1947; Filing 26/5/1948; Publ. 14/6/1950. Apparatus for imposing a constant tension on a yarn or filament comprises a series of convex bars so placed that a yarn or filament passing between them takes an undulating path, the arc of contact with the convex surface of each bar being less than 360°. At least one bar is movable so that its position relative to the others may be adjusted, and at least one bar may be heated or cooled. There may be two sets of n and $n+1$ bars, respectively mounted ladder-wise on supports that can be adjusted to vary the extent to which the bars intermesh. C.

Stacked Sheet Filter for Corrosive Liquids. North British Rayon Ltd. and R. J. B. Marsden. B.P.638,891: Appl. and filing 14/10/1947; Publ. 14/6/1950. The invention relates to a filter formed of a stack of sheets having marginal slots (for example, polystyrene sheets for sulphuric acid) wherein the slots in alternate sheets are sufficiently inclined to those in the remaining sheets to cause the inner portions of the former slots to overlap the inner portions of the latter slots. A transverse passage through all the sheets is thereby formed and the mouths of the slots in alternate sheets are displaced in the plane of the sheets relatively to those in the remaining sheets by an amount sufficient to avoid overlapping of the mouths in adjacent sheets. C.

Peanut Protein Manufacture. J. C. Arthur, jun. (to the U.S.A. as represented by the Sec. of Agriculture). U.S.P.2,529,477 of 14/11/1950. In isolating protein from peanut meal, a dense curd, which settles rapidly, is required, and this is achieved by regulating the rate at which the protein is precipitated from an alkaline solution by means of sulphur dioxide. The protein is peptised by adding sodium hydroxide to a suspension of the meal until the *pH* is about 7·5, the resulting solution is heated to 70-90° F., and gaseous sulphur dioxide is added at a defined rate. W.

Protein Filaments: Insolubilisation. R. H. K. Thomson and W. A. Caldwell (to I.C.I. Ltd.). U.S.P.2,532,350 of 5/12/1950. Coagulated, unhardened filaments, *e.g.* of peanut protein or casein, are immersed in a formaldehyde-brine solution saturated with sodium chloride at *pH* 4-6 and at a temperature insufficient to soften the filaments; they are then made insoluble in an acidified brine-formaldehyde solution containing not less than 30 parts of sodium chloride per 100 parts of water at *pH* below 1. It is unnecessary to maintain the coagulated filaments under tension during the treatment. W.

2—CONVERSION OF FIBRES INTO FINISHED YARNS

(A)—Preparatory Processes

Baling of Long Fibres. ("Emballage des fibres longues.") C. Dulac. *Industrie text.*, 1950, **67**, 285-7. Methods are discussed whereby bales of long fibres, for example hemp, jute or sisal, can be made more compact without the risk of damaging the fibres by excessive pressure. C—**2A.**

Blending of Fibres. H. L. Slater. *Text. Wkly*, 1950, **46**, No. 1184, 1384, 1386, 1388. The mixing of textile fibres is discussed and emphasis is laid on the importance of careful and correct blending. A return to the old hand-mixing methods is recommended. C—**2A.**

Card Clothing: Grinding and Repairing. ("Aiguisage et Rhabillage en Carderie.") W. Denize. *Industrie text.*, 1950, **67**, 300-305. In discussing the manufacture and maintenance of card-clothing the various shapes and settings of the wires are dealt with and their uses indicated. Maintenance of the clothing is treated in some detail. C—**2A.**

Card Coiler Conversion Unit. Whitin Machine Works. *Whitin Rev.*, 1950, **17**, No. 4, 36-38. A card coiler conversion unit that enables 12-in. sliver cans to be replaced by 14-in. cans, is announced. **C—2A.**

Flyer Frame Cone Drum and Ratchet Mechanism. ("Pulegge coniche e a stella nei banchi a fusi.") Anon. *Riv. Tessile*, 1949, **4**, *No.* **8**, 799-801. The functions of the cone drum and the "star" wheel (or ratchet-wheel) on a flyer frame are described and the relationships between shape and number of teeth are discussed in connection with the ultimate build of the package, that is, its form and evenness of density and tension. **C—2A.**

Long Fibres: "American System" of Processing. Whitin Machine Works. *Whitin Rev.*, 1950, **17**, No. 4, 13-16. The application of the "American System" of processing long fibres (1½-in. to 4½-in.) to worsted or worsted blends is briefly considered. The machinery used is mentioned and some illustrations are given. **C—2A.**

Mechanical Processing of Silk. ("La trattura meccanica della seta.") G. Gallese. *Riv. Tessile*, 1950, **5**, No. 3, 253-257; No. 4, 373-376; No. 5, 485-488. Problems involved in the mechanisation of the silk industry are discussed. The intricate machinery which has been developed to simulate manual operations does not help to make silk production competitive with that of artificial fibres and a plea is made for simpler machines by adopting a new approach. A historical survey of the development of silk-handling machinery is made, particular attention being paid to patent specifications. Numerous drawings and other illustrations are given. **C—2A.**

Pre-Conditioning of Cotton. H. Paton. *Text. Wkly*, 1950, **46**, No. 1184, 1394. A brief report is given of a lecture on the pre-conditioning of cotton by oil spraying. **C—2A.**

Raw Flax: Treatment With Emulsions. A. D. Mine'ev. *Tekstil. Prom.*, 1948, **8**, No. 1, 42 (through *Amer. Chem. Abstr.*, 1950, **44**, 8665[i]). It has been shown that the yield of flax fibre and the spinning quality are improved if the hatcheled flax is treated with a fat emulsion. **C—2A.**

Silk Filature Reeling: Automatic Machine. ("Machine pour le tirage automatique de la soie.") Anon. *RUSTA*, 1949, **24**, No. 1, 25-28. A description is given of a machine whereby the filature reeling of silk can be carried out with automatic control of yarn count, insertion of fresh cocoons and the inclusion of the corresponding new filaments in the thread. **C—2A.**

Cotton Opening and Cleaning. W. A. Hunter. *Text. Wkly*, 1950, **46**, No. 1186, 1512, 1514, 1516; No. 1187, 1578-1579. A brief survey is made of individual blow room machines and arrangements of these units for the processing of various cottons and rayon staple (single-process lapping). **C—2A.**

Cotton Waste: Processing. H. Paul. *Text. Industr.*, 1950, **144**, October, 125-127. Some hints are given on the processing of cotton waste stocks. **C—2A.**

Cotton Wastes: Utilisation. R. H. Lakhe. *Indian Text. J.*, 1950, **60**, September, 963. Cotton wastes from the card and the comber are described briefly and their utilisation indicated. **C—2A.**

Fibre Blending in Garnetted Stock. E. H. Helliwell. *Text. World*, 1950, **100**, October, 141. More uniform blending of garnetted stock has been achieved by addition of a cross feeder to the garnett. **C—2A.**

Fibro Rayon Staple Drawframe Slivers: Fibre Arrangement. W. E. Morton and R. J. Summers. *J. Textile Institute*, 1950, **41**, No. 9, T349-360. The behaviour of Fibro slivers (produced by the revolving flat card) when subjected to roller drafting, has been investigated. Single- and three-zone drafting was carried out, using various drafts, and both forward and reverse direction drawing. The state of "orderliness" and "straightness" of the fibres was followed at each operation by means of the tracer-fibre technique[1] (using dyed fibres) previously described. Results are reported and discussed. ([1]See *J. Textile Institute*, 1949, **40**, A226.) **C—2A.**

Humidifiers in Opening Room. Anon. *Text. Industr.*, 1950, **114**, October, 114. An American cotton mill has obtained more uniform laps and as a result more uniform yarn by installing humidifiers in the opening room. **C—2A.**

Roving Frame Lifting Mechanism Formula. J. F. Bogdan. *Text. World*, 1950, **100**, October, 135, 137, 230, 232. A new formula is presented for determining the number of teeth on the lifting mechanism required when the hank number is changed on a roving frame. The formula takes into account changes in density in different hank rovings. A nomogram which can be used to evaluate the equation is given. C—**2A.**

Roving Frames: Automatic Roller Beam Cleaner. Anon. *Text. Industr.*, 1950, **114**, October, 151, 153. The mill-made roller beam cleaner described consists of a cloth attached to a pulley-driven endless rope. While the frame is in operation the cloth is continously carried around and this keeps the lint from accumulating on the beam. C—**2A.**

Synthetic Fibres: Blending. A. Anderson. *Text. Industr.*, 1950, **114**, October, 108-110. This is a review of some blending methods for synthetic fibres and a description of a blending unit which is being successfully used in a number of American mills. C—**2A.**

Principles of Woollen Carding. A. Varga. *Text. Merc.*, 1950, **123**, 879-883, 928-932, 965-969, 976, 1001-6. (See *J. Textile Institute*, 1951, **42**, A47.) W—**2A.**

Condenser: Trials on a New Type. *Wool Rec.*, 1951, **79**, 712, 715, 717. Trials are to be made on a condenser which is claimed to combine the advantages of the ring doffer and tape types. The back doffer has card-clothed tapes which carry the web until they reach the point of separation where adjacent tapes move to different pairs of rubbing leathers. A guide roller facilitates the passage of the material from a stripping roller to the synthetic rubbing leathers. The tapes pass around a divided roller to prevent rubbing together. A card-clothed roller acts as a master stripper. Provision is made for seating the tapes, and for cleaning devices in the form of assembly brushes. The rubbers are of non-uniform thickness to produce even pressure. W—**2A.**

Woolsorting and the Conveyor System of Sorting. *Fibres*, 1951, **12**, 51. Brief descriptions of board sorting, trap sorting, and conveyor methods. W—**2A.**

Staple Fibres: Processing and Blending with Special Reference to Worsted and Woollen Yarn Production Systems. H. Ashton. *Papers of the Second Canadian Textile Seminar*, 1950, Sept., 41-47. This general review discusses the blending of wool and staple fibre. On the worsted system, figures are quoted for the spinning limits of various blends, single thread strengths, and single thread extensions (wet and dry). Details are given for processing blends on a 4-swift 2-part semi-Continental woollen carding set complete with mule and woollen ring spinning frame, and some faults encountered in carding are described. Viscose, Rayolanda, cellulose acetate, and nylon are mentioned. W—**2A.**

Lubrication: A New Textile Oil. Anglo-American Oil Co. *Text. Merc.*, 1951, **124**, 35. Esso Textile Oil Number 7 is a light mineral oil incorporating synthetic emulsifiers. It is claimed that this lubricant can be scoured out to leave a residual oil content of less than 0·2 per cent. if reduced amounts of alkali and soap or other detergents together with a modified rinsing procedure are employed. Other advantages claimed include good wetting-out properties, good storage stability, high resistance to oxidation, and even dispersion of oil on the fibres, which frequently results in stronger yarn. W—**2A.**

Oils for Wool Processing. F. E. Brown. *Papers of the Second Canadian Textile Seminar*, 1950, Sept., 52-57. The properties of good wool oils (for carding and spinning) are discussed, and apron oils, fulling oils and knitting oils are described. Finishing oils and finishing agents of fat origin are also mentioned. W—**2A.**

(B)—Spinning and Doubling

Blended Fibre Yarns and Fabrics: Causes of Sub-standard Quality. H. T. Heathcote. *Whitin Rev.*, 1950, **17**, No. 4, 39-43. The location of faults in the processing of blended fibres is discussed. Some results from actual practice are given which show how yarn quality can be greatly improved by correct adjustment of the processing equipment for the type of blend used. C—**2B.**

Cotton Spinning Calculation Graphs: Part XIV. Platt Bros. (Sales) Ltd. *Platt's Bull.*, 1950, **7**, No. 4, 78-80. Graphs are given for the calculation of (1)

approximate number of doffs per week on ring spinning frames, and (2) approximate time to wind off from ring spinning frame bobbins. (For Part XIII see *J. Textile Institute*, 1950, 41, A546.) **C—2B.**

Fibre Control at Draft Rollers. F. Wooding. *Text. Wkly*, 1950, **46**, No. 1184, 1380, 1382. The writer considers that a more positive feed to the drafting rollers than is customary is essential for the production of regular yarns. Methods that have been employed to reduce the slippage in the nip between the positively driven bottom roller and the frictionally driven top roller are briefly discussed. Experiments have shown that slippage may be eliminated, without giving rise to other difficulties, if the top roller is positively driven from the bottom roller by means of a pair of deeply meshed spur gears. **C—2B.**

Long-staple Cotton Spinning: Conversion from Short-staple Cotton Spinning. O. K. Bose. *Indian Text. J.*, 1950, **60**, July, 811-821. In view of the shortage of short-staple cotton in India, the possibility of spinning yarn from long-staple cotton on machinery meant for short staple, is discussed. Technical information is given on the setting of opening, carding, and spinning machinery to effect the conversion. **C—2B.**

Moulded Nylon Parts for Textile Machinery. Anon. *Modern Plastics*, 1950, **27**, No. 8, 105-106. To demonstrate the use of nylon for the fabrication of textile machinery parts, illustrated descriptions are given of an aluminium bobbin with nylon fittings, and an all-nylon bolster. **C—2B.**

Rayon Staple Spinning. H. Ashton. *Text. Wkly*, 1950, **46**, No. 1185, 1442, 1444, 1446. A report is given of a lecture on the spinning of rayon staple fibres including the spinning of cotton-rayon staple blends. A discussion following the lecture is also reported (*ibid*, 1950, **46**, No. 1186, 1518, 1520). **C—2B.**

Re-equipment of a Portuguese Cotton Mill. Platt Bros. (Sales) Ltd. *Platt's Bull.*, 1950, **7**, No. 4, 74-77. A brief illustrated description is given of the spinning department of a Portuguese cotton mill that has been re-equipped with British machinery. **C—2B.**

Sulzer Suction Clearer Device for Spinning Frames. Sulzer Bros. (London) Ltd. *Sulzer Tech. Rev.*, 1950, No. 1, 35-36. A suction device which collects broken threads as they emerge from the drafting rollers, thus preventing them from being wound on to the rollers, is described and shown. **C—2B.**

The Saxony Spinning Wheel. J. R. Sanderson. *Whitin Rev.*, 1950, **17**, No. 4, 17-25. The development of the Saxony (hand) spinning wheel is outlined and details of its construction and operation are described. **C—2B.**

Draft Roller Cleaning Device. Hilton's "Champyon" Brushes Ltd. *Text. Wkly*, 1950, **46**, No. 1186, 1542. A new roller-brush traveller is announced that is applicable to both mule and ring spinning rollers. The brush cleans all three lines of rollers in one operation. **C—2B.**

French Spinning System: Modifications. V. Saxl. *Text. World*, 1950, **100**, October, 110-111, 220. Some recent improvements in the French system of spinning are described. The arrangements on the old and improved systems are compared for yarns of various counts. **C—2B.**

The "Hegemax" Spinning Process. ("Das Hegemax-Spinnverfahren.") W. R. Batorffy. *Melliand Textilber.*, 1950, **31**, No. 1, 9-10. It has been found that, in the ring-spinning process, the tension in the yarn is greater between the drafting roller and the thread guide than it is in the balloon. This means that the tension is greatest where there is virtually no twist, thus tending to give rise to immediate breakage or later breakage due to unevenness in the yarn. To overcome this inherent weakness, the "Hegemax" rotor device has been designed to replace the thread guide and to impart a temporary twist to the yarn along the weak section. This twist is, in fact, somewhat greater than the final twist, so that slight loosening occurs during actual spinning. The device is described and the results of comparative tests made on a yarn spun in the normal and in the new manner are presented in tabular form. **C—2B.**

Irregularities in Drafting. ("Les causes d'irregularités provenant de l'étirage.") V. Zotikov. *Rayonne*, 1950, **6**, No. 4, 79-81, 83-86. After a brief review of factors causing irregularities during drafting, the author discusses their incidence in the light of the theory of probabilities. Whilst it is admitted that the results hitherto

achieved have no immediate production interest, the method of applying the theory should be of considerable use in scientific research. (Translation from the Russian into French by Breslav.) **C—2B.**

Mill Performance Charts. Anon. *Text. Industr.*, 1950, **114**, October, 100-105. A brief description is given of the system employed in an American cotton mill for the preparation of control and production charts. Several typical charts giving spinning performance are shown. **C—2B.**

Production of Angora-wool/Rayon-staple Yarn. ("Beitrag zur Verarbeitung einer Mischung aus Angorawolle mit Zellwolle in der Baumwollspinnerei.") A. Beck. *Text.-Praxis*, 1950, **5**, No. 2, 89-92. Methods are discussed for the production of Angora wool/rayon staple yarn by means of the normal cotton-spinning processes. Hints are given for overcoming difficulties arising from the nature of the fibres. **C—2B.**

Productivity in Cotton Doubling. British Association of Managers of Textile Works. *Text. Wkly*, 1950, **46**, No. 1187, 1580, 1582-1584. An account is given of a meeting of the British Association of Managers of Textile Works at which a report of the findings of the doubling productivity team on American methods was presented. **C—2B.**

Random Slubbing Motion. Platt Bros. *Platt's Bull.*, 1950, **7**, No. 5, 101-102; *Text. Merc.*, 1950, **123**, No. 3221, 1041-1042. An attachment for ring spinning frames for the production of slub yarns is described. **C—2B.**

Ring Spinning Frames: Reduction of Ring Wear. Anon. *Text. Wkly*, 1950, **46**, No. 1187, 1586, 1588, 1590. Practical information is given on means of reducing the wear of rings by the traveller. This covers the installation of new rings and their "breaking-in", and the selection of correct travellers. **C—2B.**

Spinning Room Efficiency. A. Krishnamurthy. *Indian Text. J.*, 1950, **60**, September, 961-962. The attainment of efficiency in the spinning room is briefly discussed from the aspects of men, materials and machinery. **C—2B.**

Wear on Ring-spinning and Doubling Frame Travellers. ("Das Verhalten der Läufer bei Ringspinn- und Ringzwirnmaschinen.") H. Stein. *Textil-Praxis*, 1950, **5**, No. 2, 93-96. Observations on the occurrence of thread breakage on a ring-spinning frame have shown that frequency of breaking often appears to be greater on certain spindles, and inspection shows that excessive wear of the traveller and/or the ring may be the cause, particularly where wear occurs at one point on a ring, so giving rise to an intermittent braking effect of the traveller. Photographs illustrate the points of wearing on both the ring and the traveller. **C—2B.**

Yarn Defects: "Crackers". ("Parlons un peu des 'crackers'.") — Jydé. *Rayonne*, 1950, **6**, No. 4, 46-47. Some causes of the formation of "crackers" during the drafting of yarns are described in order to indicate how these defects may be reduced. **C—2B.**

Miniature Spinning Set for "Semi-worsted" yarn. ("Halbkammgarn-Kleinspinnanlage.") *Melliand Textilber.*, 1950, **31**, 808. A miniature shortened spinning set for processing wool and other long fibres is described; the resulting yarn resembles worsted yarn and is therefore called "semi-worsted". With sufficiently long fibres, up to 50s yarn can be spun; the 48-spindle ring spinning frame is designed for processing fibres of length 50-150 mm. The set is capable of extension and can be moved without dismantling. **W—2B.**

Spinning: The Problem of Slub Clearance. *Text. Rec.*, 1951, **68**, No. 815, 107. A modified comb-type clearer for the removal of slubs from worsted yarns is described. Its main features are:—(1) automatic guidance of the yarn into the clearer, even if an attempt is made to by-pass it; (2) automatic breaking of the yarn if an unauthorised attempt is made to widen the setting by moving the swinging comb; (3) specially hardened metal at the wearing surfaces; (4) special gauge for adjusting the setting. The clearer is patented under the name "Kenicoll". **W—2B.**

Woollen Mule Spinning Production: Influence of Doffing Times. ("Der Einfluss der herabgesetzten Abziehzeit auf die Produktion in der Streichgarnspinnerei.") C. Sustmann. *Text.-Praxis*, 1951, **6**, 22. Figures are quoted to show

how mule production changes when doffing time is cut from 10 to 2 minutes by introducing doffing teams. The increased labour cost due to the team must be compared with the increased production, but so long as the labour cost per lb. is not increased, net productivity improves due to greater machine utilisation and correspondingly lower overheads. **W—2B.**

Woollen Spinning: Effect of Package Size on Spindles per Machine and Production. ("Untersuchungen über Copsgewichte, Spindelzahlen und Leistungen bei Streichgarnspinnmaschinen.") C. Sustmann. *Text.-Praxis*, 1950, 5, 758-761. The article discusses how, for a given length of mule or frame, the attainable production depends on the length and diameter of the spun packages. General methods are explained for calculating results under different conditions, and specific examples quoted. Thus, *e.g.*, for a given length of mule, long cops weighing 75 g. will give a higher rate of production than thicker cops weighing 100 g.; on a given type of frame 80-g. bobbins from 6 cm. rings should give more production per machine hr. than 320-g. bobbins from 11 cm. rings. The relative advantages depend, of course, on count. The effect of package size on subsequent processing is not analysed in detail. **W—2B.**

Spinning and Twisting Rings. ("Advantages of the Self-Lubricating Plant.") *Wool Rec.*, 1951, 79, 379-380. The principle of the self-lubricating ring is to provide a fine film of oil on the traveller bearing surface to reduce friction. Some of the arrangements for fitting the rings are described and the importance of using the correct oil is stressed. Some maintenance suggestions and common faults are mentioned. **W—2B.**

(C)—Subsequent Processes

High-Speed Stop-Motion Ring Twister. J. and T. Boyd. *Text. Mfr*, 1950, 76, October, 463-464. A new high-speed ring twister (for woollen, worsted, cotton, silk, and jute yarns) is described including details of the patent stop motion which is fitted to each spindle. The spindles have been designed to carry large packages. There are several illustrations. **C—2C.**

Braided Cord: Glazing. Anon. *Text. Industr.*, 1950, 114, October, 122-124. An illustrated description is given of a process for the application of size to braided cord and the subsequent polishing of the cord to produce a glossy finish. **C—2C.**

(D)—Yarns and Cords

Fancy Yarns: Production on Whitin Twisters: Part III. Whitin Machine Works. *Whitin Rev.*, 1950, 17, No. 4, 26-35. Technical information is presented and the production of the following types of novelty yarns is illustrated: (1) uneven twist spiral (corkscrew, ratiné, and bouclé) yarns, (2) nub, knop, or knot yarns, and (3) combinations of even twist yarns, uneven twist yarns and nub yarns. Illustrated. (For Part II see *J. Textile Institute*, 1951, 42, A48.) **C—2D.**

Nylon Bristles for Paint Brushes. E. I. du Pont de Nemours & Co. Inc. *Modern Plastics*, 1950, 27, No. 8, 120, 215. Nylon paint-brush bristles have been developed which are claimed to be superior to hog bristles in wearing qualities. **C—2D.**

Rope and Twine Manufacture. ("Analogia di principi nella formazione dei ritorti e delle corde.") Anon. *Riv. Tessile*, 1950, 5, No. 1, 53, 55; No. 2, 149-151; No. 3, 259-260. The principles and practice of rope and twine manufacture are discussed at some length. Manual, semi-mechanical and highly complicated machines, are described and illustrated. The structure of different types of rope is shown and the range extends from thin string to heavy steel hawsers. **C—2D.**

Tension Device: Design. ("The M.T.I. gyroscopic tension.") *Hosiery Trade J.*, 1951, 58, (687), 44. Reviews a new type of self-cleaning dead-weight tension designed by Muschamp Taylor Ltd., primarily for use in processing dirty yarn. **H—2D.**

Patents

Twine and Rubber High-draft Aprons: Manufacture. Armstrong Cork Co. (1) B.P.638,082: Appl. and filing 17/7/1947; U.S.A. appl. 17/4/1943. (2) B.P.638,128, assigned by R. A. Garrett: Appl. and filing 14/4/1948; U.S.A. appl. 1/7/1947. (3) B.P.638,130, assigned by J. W. Baymiller: Appl. and filing 17/7/1947; U.S.A. appl. 17/4/1943. All published 31/5/1950. (1) In a

method of making aprons for high-drafting, a piece of a flexible, wear-resistant plastic tube (for example, of synthetic rubber) is placed on a mandrel to which soap solution or similar lubricant has been applied, softened by the application of a solvent, tightly wrapped with "twine" (for example, 36s/4 cotton cord), brushed so that the softened rubber is spread over the embedded twine, and covered with a wear-resistant layer, *e.g.*, by slipping over the assembly an inflated tube of the same rubber. The whole is then consolidated into an integral unit, *e.g.*, by tightly wrapping with wet fabric tape and vulcanising. (2) The tube is made of a copolymer of butadiene and acrylonitrile and the plasticizing agent is conveyed by the "twine". (3) The tube is formed by wrapping the mandrel with sheet rubber and butt-welding the seam. C.

Casablancas Drafting Apron Guides. J. P.-R. Casamitjana. B.P.638,529: Appl. and filing 10/10/1947; Publ. 7/6/1950; Spanish appl. 13/12/1946. The inventor stresses the importance of the precision to which the guide pieces are made for the aprons of Casablancas drafting mechanism. To secure the required precision he proposes to form a guide piece from a single piece of metal by appropriate bending and stamping so as to provide two parallel branches of convergent cross-section for guiding the aprons, a projecting head by which to grasp the piece when fixing it in position, and opposite projections on the two branches to prevent the piece from slipping laterally. C.

Spinning Frame Suction Pipe Connections. Hans Bartschi. B.P.638,786: Appl. and filing 2/7/1948; Publ. 14/6/1950. The inventor refers to the difficulty of fitting a spinning frame with a suction conduit and its vertical branch pipes, when these are brought to the usual narrow alley ways in one piece. He proposes to provide the side pipes with a screw thread that fits the helical rims to holes in flattened parts of the main conduit. The side pipes can thus be fixed in position on the spinning frame. C.

Carding Machines. R. Firth & Sons Ltd. and J. W. Radcliffe. B.P.647,246 of 6/12/1950. Means are described for preventing the delivery of imperfectly-opened material to the swift. Three lickers-in are provided between the creeper sheet and the swift. In front of the first licker-in there are the usual feed rollers, between the first and second and the second and third lickers-in there are top and bottom workers, and between the third licker-in and the swift there is a transfer roller. A drawing shows the directions of rotation and the inclinations of the teeth of the various rollers, which are so arranged that insufficiently-opened material is carried back for further treatment before being passed to the swift. W.

Hair Spinning. F. A. Bluhm, D. W. Hayes and A. H. Zeigler (to Armour & Co.). U.S.P.2,529,674 of 14/11/1950. Apparatus is claimed for spinning all grades of hair, *e.g.* 100 per cent. hog hair, cattle hair or horse mane. A rotatable hopper is mounted in a frame. Means are provided for rotating a portion of the fibres in the hopper to form a strand, and coiling means for rotating the strand at a slower speed to twist it into a rope. The coiling means consist of a laterally-extending horn and a guide vane for removing the rope as new spirals are formed. The vane and horn provide uniform tension on the strand. The hair should be delivered to the hopper in separated condition. W.

3—CONVERSION OF YARNS INTO FABRICS

(A)—Preparatory Processes

"Arunconer" High-speed Cone Winding Machine. Arundel, Coulthard and Co. Ltd. *Text. Mfr.*, 1950, **76**, October, 477. Features of this new cone winder are briefly indicated. (See also *J. Textile Institute*, 1950, **41**, A494.) C—3A.

Automatic Weft-winding. ("L'automatisme intégrale au cannetage.") A. Levesque. *Industrie text.*, 1950, **67**, 307-311. A detailed description is given of the mode of operation of the Schweiter "super-automatic" weft-winder in which provision is made, not only for the automatic doffing and replacement of bobbins, but also for the orderly feed of empty bobbins to the spindles and the organised removal of filled bobbins. The essential mechanisms are shown diagrammatically. C—3A.

Nylon Processing—Parts II-VI. British Nylon Spinners Ltd. *Text. Merc.*, 1950, **123**, No. 3217, 885, 887, 889, 891; No. 3218, 922, 925; No. 3219, 961-962; No. 3220, 999-1000; No. 3221, 1043, 1055. Further abstracts[1] from the Nylon Technical Service Manual are presented: II, Yarn winding tensions and tension devices, and the control of static electricity; III, knotting nylon yarn; IV, gumming, winding, and warping; V, warp sizing, and twist liveliness testing; and VI, pirning and weaving. ([1]For Part I, see *J. Textile Institute*, 1951, **42**, A83.) C—**3A.**

Terylene: Processing. Anon. *Text. Wkly*, 1950, **46**, No. 1185, 1460, 1462. Some information is presented on the processing of "Terylene" continuous filament yarn, including winding, warp sizing, pre-setting, desizing, and dyeing and printing. Mention is also made of "Terylene" staple fibre. C—**3A.**

Adjustable Yarn Tension Guide. Johnson and Hartley Ltd. *Text. Wkly*, 1950, **46**, No. 1186, 1542; *Text. Merc.*, 1950, **123**, No. 3220, 1018. A new adjustable yarn tension guide for either left-hand or right-hand operation is announced. C—**3A.**

Barber-Colman Spooler: Increasing Production. H. P. Lynch. *Text. World*, 1950, **100**, October, 129, 212, 214, 216. The improvement of the efficiency and production of the Barber-Colman spooling machine is discussed under: (1) efficiency of machine, (2) winding efficiency of yarn, (3) efficiency of operators, and (4) efficiency of management. C—**3A.**

Rayon Yarn: Warping and Creeling. J. C. Meijberg. *Rayon Revue* (English Issue), 1950, No. 3, 1-17. This is a combined English translation of three articles in Dutch covering: (1) rayon warping in the weaving industry, (2) creeling of rayon yarn, and (3) rayon warping for knitting. For the original references and abstract see (1) *J. Textile Institute*, 1950, **41**, A12; (2) *J. Textile Institute*, 1950, **41**, A114; (3) *J. Textile Institute*, 1950, **41**, A249. C—**3A.**

Stop Loom Stops in Warp Preparation. E. P. Schremp. *Text. World*, 1951, **101**, No. 1, 102-103. Suggestions for increasing loom production include good knot tying, sizing of certain worsted warps, applying droppers before looming, making repairs on loom before trouble arises, and preparing spare parts for quick installation. W—**3A.**

Winder-Bobbin Holders Replace Feed Spindles. T. N. Bird. *Text. World*, 1950, **100**, No. 11, 200. Production is stated to be increased by substituting spring holders for feed spindles when winding yarn from spinning-mule bobbins. Empty bobbins are pushed out of the holders and fall into a trough. This is shown diagrammatically. W—**3A.**

W.I.R.A. Reaching-in Machine. Wool Industries Research Association. *Wool Rec.*, 1951, **79**, 547, 549. A general description of the method of operation of this machine, which replaces the reacher-in, and which is suitable for all types and counts of spun yarn. A speed of up to 60 ends per minute can be obtained. As one thread is drawn, the next immediately moves into its correct position. Two types are available; one works from right to left, and the other from left to right. W—**3A.**

Carpet Looms. ("An Improved Threading Machine.") H. R. Carter and Son. *Text. Merc.*, 1950, **123**, 1052. An improved version (with automatic feed) of the McQueen carpet loom threading machine is described. It may be operated by unskilled workers and requires a floor-space of 8 ft. × 3 ft.; the machine has a height of 2 ft. 9 in., and requires only ¼ h.p. to drive. The McQueen automatic threader is described. W—**3A.**

(B)—SIZING

Drying of Sized Warps. ("Das Trocknen der Ketten beim Schlichten.") G. Klingenberg. *Text.-Praxis*, 1950, **5**, No. 1, 37-40. Drying, is it argued, has an effect on the weaving properties of a sized yarn almost as important as that of the actual composition of the sizing medium. Hot cylinder, hot air and infra-red drying methods are compared. C—**3B.**

Magnetic-clutch for Sizer Take-Up Drive. J. S. Campbell. *Text. World*, 1950, **100**, October, 108, 109, 280. Illustrations and a description are given for a take-up drive on a sizing machine that employs a magnetic clutch. A substantially uniform yarn tension is obtained through controlled clutch slippage. C—**3B.**

Size Analysis Calculations: Nomograph. H. E. Zeiger and H. M. Waddle. *Text. Industr.*, 1950, **114**, October, 120-121. A nomograph is presented that enables the percentage size on a yarn to be rapidly calculated (from the results of analysis). The chart gives the percentage size corrected for moisture content and moisture regain. **C—3B.**

Sizing of Cotton Warp. M. M. Tiwari. *Indian Text. J.*, 1950, **60**, September, 956-959. The primary object of sizing, the properties of the ideal size mixing, and the preparation of size mixtures are described. **C—3B.**

Hosiery Yarns: Lubrication. W. V. Hitchenar. *Hosiery Trade J.*, 1951, **58**, (687), 26. Discusses developments in oils for application to hosiery yarns directly after sizing, and just prior to knitting, and in techniques of lubrication. **H—3B.**

Nylon Yarns: Sizing. *Hosiery & Underwear Rev.*, 1951, **34**, (3), 140-1. Review of recently developed sizes for nylon hosiery yarns, and modifications of older sizes for this purpose. **H—3B.**

(C)—WEAVING

Automatic Shuttle Change: Poncet System for Multicoloured Weft. ("Mouvement Poncet pour le remplacement de la navette sans arrêt du métier sur les métiers à plusieurs couleurs en trame.") Anon. *RUSTA*, 1949, **24**, No. 1, 33-35. Details are given of the Poncet system of automatic shuttle change as described in French Patent Specification 921,000 (application: 26th October, 1945). **C—3C.**

Jacquard Cards: Automatic Machine. ("Macchina automatica per riprodurre i cartoni Vincenzi e Jacquard.") C. Stucchi. *Riv. Tessile*, 1949, **4**, No. 8, 801. A short description is given of an automatic machine for preparing Jacquard cards which has been manufactured by the Cesiro Stucchi Engineering Works. **C—3C.**

Keighley Model K100 Automatic Loom. George Keighley Ltd. *Text. Rec.*, 1950, **68**, October, 95-96; *Brit. Rayon & Silk J.*, 1950, **27**, October, 56-57. Details are given of the Keighley Model K100 automatic loom. The loom is of the bobbin changing type and features a simplified design. **C—3C.**

Rayon Weaving Efficiency. Anon. *Text. Whly*, 1950, **46**, No. 1185, 1448, 1450, 1452. An account is given of a meeting of the British Association of Managers of Textile Works at which a report of the rayon weaving productivity team on American rayon weaving practices was presented. A summary is also given of the ensuing discussion (*ibid*, 1452, 1454). **C—3C.**

Ruti Two-cylinder Dobby. W. Middlebrook. *Text. Mfr*, 1950, **76**, October, 465-466, 476. A technical description is given, including details of the cutting of the paper patterns used on this dobby. **C—3C.**

Smallwares Loom. Backer and Rueb. *Brit. Rayon & Silk J.*, 1950, **27**, October, 54-55. A new Dutch loom for the production of tapes, ribbons and other smallwares is described. **C—3C.**

Temples: Types and their Adjustment. ("Les templets, leurs types, leur réglage.") Anon. *RUSTA*, 1949, **24**, No. 1, 29-30. The nature of the weaves of certain fabrics made of, for example, cotton or rayon, presents some difficulty in control by the temples. Appropriate adjustment of the temples for specific cases is discussed. **C—3C.**

Unit Motors for Looms. ("Contributo allo studio delle motorizzazioni per telai da tessitura.") T. Levrini, N. Zanaboni and N. Bertagnoni. *Riv. Tessile*, 1949, **4**, No. 8, 805-808, No. 9, 911, 913-915. Factors involved in the application of the motor drive principle to textile machinery, particularly looms, are discussed at some length. **C—3C.**

Automatic Devices for Plain Looms. ("Erhöhte Leistung durch Automatisierung.") R. Schulze. *Melliand Textilber.*, 1950, **31**, No. 2, 96-99. The possibilities and difficulties associated with the conversion of existing plain looms to automatically operated machines are examined, and various devices are described, together with some of the structural alterations and possible redisposition of shafts, picking mechanisms, and regulators. **C—3C.**

Calculation of Yarn Take-up in Weaving. ("Berechnung des Einwebungsgrades aus Garnnummer und Fadendichte.") G. Satlow. *Melliand Textilber.*, 1950, **31**, No. 1, 13-16; No. 3, 174-175. Formulæ have been derived

by means of which the take-up of cotton or flax yarns during the weaving of plain fabrics, can be calculated from their metric count and the density of the weave. The equations are based on the shape of the curves of the woven yarn which, in effect, resembles a continuous series of semi-ellipses. C—**3C.**

Constructional Improvements in Looms. ("Neuerungen im Webstuhlbau.") H. Hollstein. *Melliand Textilber.*, 1950, **31**, No. 3, 171-173. A general survey is made of the chief improvements in loom construction within the last ten years, particularly attention being paid to Swiss and U.S.A. developments. The most essential feature in ordinary loom design modification is the operation of shafts without requiring a superstructure, together with automatic pick-finders. Circular looms and new Sulzer looms are discussed. (From Author's summary.) C—**3C.**

Hodgson Dobby Loom: Card Cutting. ("Bindungstechnische Auswertung der Schaufelschaftmaschine.") F. Reichel. *Melliand Textilber.*, 1950, **31**, No. 2, 99-104. A general explanation is given of the system of card cutting for the Hodgson dobby loom. The function of the cards in producing various types of weave is described. C—**3C.**

New Range of German Looms. Textilmaschinenbau G.m.b.H. *Text. Wkly*, 1950, **46**, No. 1187, 1592, 1594, 1596; *Text. Merc.*, 1950, **123**, No. 3221, 1048, 1050-1052. Details are given of the construction and the various mechanisms of looms in the new "Günne" range. These box looms are suitable for the production of light and heavy fabrics in any fibre. Several illustrations are given. C—**3C.**

Rayon Staple-Wool Blended Yarns: New Weaving Mill. Courtaulds Ltd. *Indian Text. J.*, 1950, **60**, September, 935-937. A brief illustrated description is given of the Bull Royd mill of Courtaulds Ltd., which has been re-equipped for the weaving of rayon staple-wool blended yarns. C—**3C.**

Right-hand Weft Stop-motion. C. A. Gunn. *Text. Industr.*, 1950, **114**, October, 112-113. A brief description is given, with illustrations, of the fitting of a right-hand weft stop-motion to plain or dobby looms. C—**3C.**

Shuttle Tension: Measurement. E. J. Saxl. *Text. Industr.*, 1950, **114**, October, 131, 133, 135. After mentioning some fabric defects due to incorrect tension of weft yarn, the measurement of tension as the yarn leaves the shuttle is discussed. A method is described. The adjustment of shuttle tension and factors affecting this tension are outlined. C—**3C.**

Swiss Ribbon Loom Construction. ("Moderne Schweizer Bandwebstuhlkonstruktion.") E. Wagner. *Textil-Praxis*, 1950, **5**, No. 2, 104-106. Various innovations in Swiss ribbon looms are described. These include a multi-ribbon loom without superstructure, the application of shuttleless weaving methods to multi-ribbon looms, a single ribbon high-speed loom, and preparation machinery for ribbon weaving. C—**3C.**

Carpet Knots. A. Crossland. *Text. Mfr*, 1951, **77**, No. 913, 22-24. Descriptions and diagrams of the reef knot, single thumb-knot, and double thumb-knot, together with some variants of these. W—**3C.**

Uncut Moquette: Construction and Manufacture. J. Cowburn. *Text. Mfr*, 1951, **77**, No. 913, 15-17. Description, together with diagrams, of the manufacture of uncut moquette are given. The subjects discussed include lifting, pitches and harness tying, and figured styles. All normal pitches of jacquard machines (Yorkshire, Vincenzi and Verdol) are used in the manufacture of these fabrics, but the number of hooks employed varies enormously. W—**3C.**

(D)—KNITTING

Fully Fashioned Hosiery Machinery: Developments. R. Innes. *Brit. Rayon & Silk J.*, 1950, **27**, October, 64-66. The knitting elements of Cotton's patent frames and their cycle of operation are described with the aid of diagrams. C—**3D.**

Modern Knitting Machinery. J. B. Lancashire. *Text. Rec.*, 1950, **68**, October, 88-90. A survey of some of the latest developments designed to increase versatility, reduce manual operation, and increase rate of production. C—**3D.**

Principles of Weft Knitting: Part II—Looping Elements. S. B. Bradley. *Brit. Rayon & Silk J.*, 1950, **27**, October, 61-63. The construction and characteristics

of the "bearded" or "spring" needle and the latch needle are described. (Part I, see *J. Textile Institute*, 1951, 42, A88.) C—3D.

Stop Motion for Knitting Machines. G. Stibbe and Co. Ltd. *Brit. Rayon & Silk J.*, 1950, 27, October, 57. Details are given of the "Capstan" electric stop motion for knitting machines. C—3D.

Warp Knitting Technology: Part VIII. D. F. Paling. *Brit. Rayon & Silk J.*, 1950, 27, October, 58, 60, 61. Some further examples of warp knitted net fabrics are described and illustrated. (Part VII, see *J. Textile Institute*, 1951, 42, A87.) C—3D.

Circular Hosiery Knitting-machine Patterns. ("Theorie der Musterberechnung auf Rundwirk- und Rundstrick-maschinen. Die Mehrsystemigen Muster.") L. Friedl. *Melliand Textilber.*, 1950, 31, No. 1, 22-25. The restrictions imposed on tuck patterns by the constructional limitations of the knitting machine are discussed. Relations between the height of the design, H, and the index of rise, X, of multiple-system designs on the one hand, and the index of rise, x, and the height of design, h, of single-system designs on the other, are expressed. Examples are given to explain the process of computing the designs of multi-system patterns. (From Author's summary.) C—3D.

Continuous Removal of Fly from Flat Knitting Machines. ("Hilfsvorrichtung zur kontinuierlichen Faserflugbeseitigung von den Nadelbettkämmen der Flachstrickmaschinen.") W. Busch. *Melliand Textilber.*, 1950, 31, No. 2, 104-106. A device is described for the removal of fly from the bed comb during the operation of a flat knitting machine. C—3D.

Full-Fashioned Hosiery: Production Tips. Anon. *Text. Industr.*, 1950, 114, October, 143. A few hints are given on the inspection, handling and storage of fully-fashioned hosiery. C—3D.

Snags in Nylon Hosiery: Mending by Heat Treatment. Anon. *Text. Industr.*, 1950, 114, October, 106-107. An illustrated description is given of a process for the correction of pulled threads in nylon hosiery by means of a heat treatment. The device used, known as the Thermset, fuses the repaired snag into position. C—3D.

Yarn-Cone Holder for Knitting Machines. Anon. *Text. Industr.*, 1950, 114, October, 129. Details are given of the construction of an adjustable yarn-cone holder for circular knitting machines, which is designed to prevent the yarn from getting under the outer edges of the cone during knitting. C—3D.

Hosiery: Non-Run Constructions. ("Open-mesh hosiery.") J. B. Lancashire. *Hosiery Times*, 1951, 24, (262), 29-30, 45. Describes mechanisms involved in the manufacture of non-run constructions for hosiery. References are made to the Schwartz non-run texture, Graenz patent texture and the Cotton's patent lace. Diagrams. H—3D.

Circular Knitting Machine: Design. *Hosiery Times*, 1951, 24, (262), 35-8. Describes a new circular spring needle knitting machine built by Tomkins Bros. Co., New York. The machine produces a wide range of woven fabric effects. In principle the machine follows the English loop wheel system of knitting in which bladed wheels are used for the formation of loops and for the manipulation of the fabric about the needles. Illustrations. H—3D.

Ribbed Fabric Knitting Machine: Design. *Knitted Outerwear Times*, 1951, 19, (6), 7. Describes design and construction of Supreme Knitting Machine Company's new dial and cylinder machine, Model SR, for knitting ribbed fabric. Diagrams and illustrations. H—3D.

Fully-Fashioned Knitting Machines. *Hosiery Trade J.*, 1951, 58, (687), 22, 24. Report of discussion between Mr. G. Wilders and Mr. H. Oldham on the respective merits of long multi-head and short multi-head or single-head fully fashioned frames. H—3D.

Fully-Fashioned Knitting Machine. *Hosiery Times*, 1951, 24, (262), 27. A note on the introduction to the British market of the new German 28-division automatic fully-fashioned hose machine manufactured by Boehringer Bros. of Goppingen. The up-to-date attachment and the lubrication of the machine are described. Illustrations. H—3D.

Knitting Machines: Cleaning. *Hosiery Trade J.*, 1951, **58**, (687), 40. Note on C.M.I. pneumatic vacuum cleaner, which combines air blast and suction in one machine. Use for removing fluff from knitting machinery is suggested. **H—3D.**

(G)—FABRICS

Crêpe Fabric: Structure. ("Composition d'un tissu crêpe.") J. Constant. *RUSTA*, 1949, **24**, No. 1, 30-33. The production of a well-balanced crêpe fabric depends on three main factors: (*a*) the cover, (*b*) the weave, and (*c*) the weft. These are discussed separately but without reference to the twist of the yarn. **C—3G.**

Fabrics with Uni-directional Rigidity. ("Le tissu rigide dans un seul sens.") L. Rambault. *Industrie text.*, 1950, **67**, 312-316. The production is discussed of fabrics which exhibit greater rigidity in the one direction than in the direction perpendicular to it. **C—3G.**

Imitation Plastic Carpets. Southbridge Plastics Inc. *Modern Plastics*, 1949, **27**, No. 1, 87. A carpet-like floor covering has been developed that consists of a deep-embossed sheet of polyvinyl chloride laid over sponge rubber. The material is flame resistant and will not support combustion. A sample of the material is shown. **C—3G.**

Imitation "Uncut Moquette" in Warp Tapestry Fabrics. J. Cowburn. *Text. Mfr*, 1950, **76**, October, 470-471. Instructions are given for the weaving of warp tapestry fabrics with an imitation "uncut moquette" effect. **C—3G.**

Non-Woven Cellulose Acetate Lace. Minnesota Mining and Mfg. Co. *Modern Plastics*, 1949, **27**, No. 4, 93. A lace-like plastic fabric made from cellulose acetate and known as "Lacelon" is announced. It is flameproof, will not run or unravel, and can be washed. Two examples of its use are illustrated. **C—3G.**

Silk Fabric: Use of Special Effects Employed in Ribbon Manufacture. ("Effets spéciaux à la rubanerie et utilisable pour les tissus soierie.") L. Haindol. *RUSTA*, 1949, **24**, No. 1, 40-45. Various effects which may be obtained by employing a number of "floating" ends, that is, ends supplied from a laterally displaceable bobbin instead of from the beam, are described. **C—3G.**

Smallwares: Production, No. 1. A. Thompson and S. Bick. *Brit. Rayon & Silk J.*, 1950, **27**, October, 52-54. Instructions are given for the weaving of skirt waist-bands, trouser waist-bands (containing elastic), "Rufflette" tapes, and button-hole elastic web. **C—3G.**

Studies in Textile Design II: Check Effects. Anon. *Text. Rec.*, 1950, **68**, October, 81-82. The construction of some check fabrics produced by the use of different coloured yarns and based on standard 2 and 2 twill, is described. **C—3G.**

Warp Knitted Fabrics: Basis of Pattern. C. H. Edwards. *Text. Rec.*, 1950, **68**, October, 93-94. All patterns are produced by the use, in regular or irregular sequence, of a certain number of variables. In this discussion on pattern in warp knitted fabrics the variables considered are (*a*) mechanical variables, (*b*) yarn variables, and (*c*) fabric variables. **C—3G.**

Bare Tyre Cords: Influence of Fibre Ends on Adhesion. W. J. Lyons. *Text. Res. J.*, 1950, **20**, No. 9, 654-656. Some experimental results are reported that confirm that the presence of fibre ends in a tyre cord contribute to improved adhesion. Comparison of results on rayon-staple and continuous-filament rayon cords (without adhesive), shows that the spun rayon cord has about 60 per cent. better adhesion than the continuous-filament cord. **C—3G.**

Crêpe Weaves. T. Raspe. *Rayon Revue* (English Issue), 1950, No. 3, 41-54. This is an English translation of a Dutch article giving details of the construction of nondescript, or crêpe weaves. (For the original reference and abstract see *J. Textile Institute*, 1950, **41**, A250.) **C—3G.**

Inlaid Knitted Fabrics. H. Wignall. *Text. World*, 1950, **100**, October, 114-115. The author gives an analysis and description of typical inlaid knitted fabrics, together with a brief outline of the production details. Some examples of the structure of these fabrics are illustrated. **C—3G.**

Towelling. ("Handtücher.") H. Hamann. *Melliand Textilber.*, 1950, **31**, No. 1, 18-19. The article deals with the weaving of towellings, covering not only plain and striped towels but also the inclusion of coloured designs and the use of

pure and half-linen, cotton, staple fibre and mixture yarns in the production of drill-, kitchen-, glass-, huckaback-, and jacquard-towels. Eight original designs are presented, two of these being accompanied by details of the width, number of picks and ends, draft, warping sequence, number of threads per dent and material for 20 shafts, as well as six point-paper designs for crêpe weaves for 8, 10, and 12 shafts. (From Author's summary.) C—**3G.**

Typical "Bemberg" Fabrics. ("Typische 'Bemberg'-Kupferseidengewebe.") Anon. *Melliand Textilber.*, 1950, **31**, No. 1, 20-21. The structure and application of four different "Bemberg" cuprammonium rayon fabrics are discussed. Specimens of the fabrics are included. C—**3G.**

Harris, Shetland and Homespun Tweeds. ("Portex.") *Wool Rec.*, 1951, **79**, 709, 711. The characteristics and manufacture of these tweeds are compared and described. W—**3G.**

PATENTS

Winding Machine Thread Tensioning Device. Gérard des Groseilliers. B.P. 638,074: Appl. and filing 22/5/1947; Publ. 31/5/1950. The invention relates to a thread-tensioning device particularly for use with a "redraw" machine on which yarn is re-wound, inspected for defects and cleared at running speeds up to 500 yards per minute. It consists of a plate that carries a pair of laterally spaced thread guides between which is a curved slot, and a first-order lever pivoted on the other face of the plate. One arm of the lever has a counterweight and the other has a projection that reaches through the slot and carries a movable thread guide. C.

Filter-press Cloths: Manufacture. J. S. and C. R. Heath (trading as G. H. Heath & Son). B.P.638,122: Appl. 3/3/1948; Filing 26/2/1949; Publ. 31/5/1950. The claim is for a filter press cloth for use with pottery clay slip. Two squares of canvas, with the usual circular apertures at their centres are connected by a piece of flanged rubber tubing, the flanges being attached to the fabric about the holes by a suitable adhesive. Stitching around the holes is unnecessary and the tubes can be used again when the fabric is worn out. C.

Terylene Scaffolding-thread: Application in the Production of Twistless Cotton Fabrics. B. P. Ridge and Imperial Chemical Industries Ltd. B.P.638,338: Appl. 17/3/1948; Filing 14/3/1949; Publ. 7/6/1950. The invention relates particularly to the production of soft and lustrous fabrics from twistless yarns of cotton or regenerated cellulose. A polymethylene terephthalate yarn (for example, 10 or 20 denier Terylene) is twisted round the base yarn (for example, 30s cotton) so that the core becomes devoid of twist, the composite yarn is woven into a fabric, and the "scaffolding" thread is removed by boiling the fabric with dilute caustic soda. C.

High-speed Tricot Knitting Machine. S. G. Dehn (for Vanity Fair Mills, Inc.). B.P.638,421: Appl. and filing 29/4/1947; Publ. 7/6/1950. The stated objects of the invention are (1) To provide high-speed running as free as possible from vibration, (2) To employ hook needles with sliding tongues the movements of which are such that thread guides having only and down motion can be used, (3) To employ stationary sinkers, and (4) To provide a machine of the tricot type in which needles with sliding tongues are moved together through figure 8 or hour-glass paths. Details of the various mechanisms are disclosed in the 18 claims and illustrated in eight sheets of machine drawings. C.

Pirn Winding Machine Builder Motion and Traverse Mechanism. Harrison Knitting and Textile Machinery Co. Ltd. and W. H. Kimpton. B.P.638,558: Appl. 20/5/1947; Filing 29/4/1948; Publ. 14/6/1950. The claims are for a builder-motion and traverse mechanism that can be incorporated in an automatic pirn-winding machine or used with a non-automatic machine. The traverse guide is mounted on a carriage that is driven from a builder disc on a screwed rod which makes contact with the wound thread on the pirn so as to be rotated thereby and screw itself along the rod. The to-and-fro motion of the guide is effected by a rotatable cam extending the length of the pirn and engaging a follower connected to the guide. Details are given in turn of the main drive, spindle drive, traverse cam, winding spindle, builder motion and traverse guide, magazine, thread guide, trip and change motion, stop motion, cam box, automatic

tube change, minor parts, cam cycle and chase adjustment, for an automatic pirn winder incorporating the new devices. There are nine sheets of machine drawings. C.

Loom Weft-thread Brake. Sulzer Frères Soc. anon. B.P.638,587: Appl. and filing 9/10/1947; Publ. 14/6/1950; Swiss appl. 10/10/1946 and 2/9/1947 [Addition to B.P.605,475*]. A device for braking the weft on a loom comprises a flexible strip of metal which bears on the weft as it runs over a rigid member and is held taut by at least two opposing tensile forces; for example, the strip may be an endless band passing around a pair of rollers. Various embodiments are included in the 20 claim. (*See *J. Textile Institute*, 1949, **40**, A96.) C.

Fibre-bonded Cellulosic Fabrics: Production. Courtaulds Ltd., Frank Happey and J. H. Grimes. B.P.638,591: Appl. 7/11/1947; Filing 5/11/1948; Publ. 14/6/1950. Sheets of cellulosic fibrous material (for use as towels and wiping cloths) are made by forming a layer (for example, card web) of fibre at least part of which is partially acetylated cellulose, and rendering the ester adhesive (for example, by spraying with methylene chloride) so that the fibres are bonded together. C.

Pirn Winding Machine Thread-engaging Device. Harrison Knitting and Textile Machinery Co. Ltd. and W. H. Kimpton. B.P.638,619: Appl. 20/5/1947; Filing 29/4/1948; Publ. 14/7/1950 [Divided out of B.P.638,558]. Means for engaging a thread to a package support, especially in automatic pirn winding, comprise a driven spindle adapted to engage and drive one end of a package support in the form of a tube, a peripherally notched disc carried on the end of the spindle with freedom for axial movement, but rotating with the spindle, and a resilient ring on which the disc closes under pressure between the spindle and the end of the tube. C.

Pirn Winding Machine Traverse Mechanism. Harrison Knitting and Textile Machinery Co. Ltd. and W. H. Kimpton. B.P.638,620: Appl. 20/5/1947; Filing 29/4/1948; Publ. 14/6/1950 [Divided out of B.P.638,558]. The invention relates to a traverse mechanism especially for an automatic pirn winder in which very high speeds are possible by avoiding reciprocating parts. A stout, screwed rod is mounted parallel to the centres between which the horizontal pirn is mounted and a parallel plain rod guides a light carriage formed of two spaced plates lying above and below the screwed rod. Between gaps in the plates lies a builder disc that works along the screwed rod as it is turned by contact with the yarn on the pirn tube. The traverse guide is a lever supported by the carriage, one end serving as the cam follower to a heart-section cam mounted on a shaft parallel to the pirn centres, the shaft rotating in the free ends of a pair of levers capable of being rocked towards and away from the carriage so that rotation of the cam provides for continuous operation of the guide. The cam is driven by chain and sprocket. C.

Winding and Beaming Machine Yarn Tension Device. Thomas Grimshaw. B.P.638,636: Appl. 6/6/1947; Filing 8/12/1947; Publ. 14/6/1950. A yarn tension device for winding, beaming and similar machines comprises two rows of closed eyelets in parallel but staggered formation, either row being capable of movement towards and away from the other against the action of a load that may be exerted by adjustable spring or weighting means. The yarn is guided to the first eyelet *via* a small hole in the device or in the machine to which the device is fitted. C.

Circular Latch-needle Knitting Machine Stitch-cam. Scott and Williams, Inc. (assignees of F. R. Page). B.P.638,650: Appl. and filing 30/9/1947; Publ. 14/6/1950; U.S.A. appl. 3/10/1946. A circular knitting machine of the independent latch-needle type is fitted with a stitch-cam, the needle draw-down surface of which comprises straight portions connected by an intermediate curved portion so shaped and located that during the closing of the latches the lowering of the needles is slower than it is on the straight portions. C.

Circular Knitting Machine Clutch Mechanism. Mellor Bromley & Co. Ltd. and Arthur Shortland. B.P.638,657: Appl. 24/12/1947; Filing 14/12/1948; Publ. 14/6/1950. The invention relates to the clutch mechanism of circular hose knitting machines that operate both with rotary motion and with rotary-reciprocatory or oscillatory motion in the production of heel and toe pouches. The means

whereby the slidable clutch member is automatically shifted from one position to another are simplified by making dual use of a lever that is operated automatically for some other purpose, for example, for operating the cam that moves the instep needles to and from a non-knitting position. C.

Thread Advancing and Storage Reel. J. & P. Coats Ltd. (for Clark Thread Co.). B.P.638,658: Appl. 29/12/1947; Filing 1/12/1948; Publ. 14/6/1950. A reel apparatus for automatically winding and advancing thread in a helical path comprises a main reel having a series of thread-supporting arms spaced about its periphery, a second, smaller reel axially reciprocable as a whole in relation to the main reel within the periphery thereof and having a series of thread-engaging arms interdigitating with the arms of the supporting reel. C.

Sewing-machine Shuttle-bobbin Winding Mechanism. Jones Sewing Machine Co. Ltd., Stanley Jefferson and Frederick Griffiths. B.P.638,685: Appl. 15/12/1947; Filing 19/10/1948; Publ. 14/6/1950. The invention relates to a two-armed, spring-loaded lever pivotally mounted on the driving shaft of a sewing machine by means of which the driving pulley is disengaged when a shuttle bobbin is put in position on the shaft for winding and re-engaged when the full bobbin is removed. C.

Flat Knitting Machine Stop Motion. Bertram Moulds. B.P.638,725: Appl. 13/3/1948; Filing 10/3/1949; Publ. 14/6/1950. The invention relates to a safety device for fitting to the cam carriage of a flat knitting machine, particularly for the detection of faulty loading-up of the needles and actuating means for stopping the machine. Details are shown in four sheets of machine drawings. C.

Yarn Winding Machine Differential Mechanism. Arundel Coulthard & Co. Ltd. and Frank Pilkington. B.P.638,727: Appl. 20/3/1948; Filing 24/1/1949; Publ. 14/6/1950. To prevent the building up of patterns on a cheese or bobbin in winding, the cam for reciprocating the yarn guides is driven by a lever which at one end engages between lugs on the side of the cam, at its other end is engaged by a driving pin on a gear wheel, and at an intermediate point is journalled upon an eccentric revolved by a second gear wheel co-axial with the first, but driven at a different speed. C.

Automatic Bobbin Bunch-building Motion. Dominion Textile Co. Ltd. B.P. 638,747: Appl. and filing 8/1/1947; Publ. 14/6/1950; Canadian appl. 18/9/1946. The invention relates to means whereby the bunch-building motion can be set to provide a bunch of yarn long enough for as much as four or five picks on a 9 ft. loom. This is secured by a special dog and clutch device whereby the reduced traversing cam of the usual motion can rotate more than once before interlocking with the builder cam so as to give additional short traversing movements to the builder bar.. Details are shown in six sheets of machine drawings. C.

Solid-cop Shuttle Lining. D. W. Shimwell and McGregor and Balfour Ltd. B.P.638,759: Appl. 19/8/1947; Filing 2/7/1948; Publ. 14/6/1950. The invention relates to means for holding a cop in a shuttle for unwinding from inside (that is, a "solid" cop) so that it does not fall apart. The inside top part of the shuttle is lined with a compressible (squeezable) material, such as ribs or flaps of rubber. C.

Straight-bar Knitting Machine Carrier Driving Mechanism. Mellor Bromley & Co. Ltd. and Arthur Shortland. B.P.638,872: Appl. 13/5/1947; Filing 29/4/1948; Publ. 14/6/1950. The general claim is for apparatus for driving a member of a knitting machine to and fro between limit stops, comprising releasable coupling mechanism for establishing a positive driving connection between the driver and the driven member, and coupling release means carried by the driven member and operable by approach to either limit stop to render the coupling mechanism temporarily ineffective to transmit the drive in the direction in which the driven member or the coupling release means is approaching the limit stop under consideration, but capable of re-engagement on reversal of travel of the driver. In particular, the invention relates to the carrier or carrier rod of a straight-bar knitting machine, as the "driven member", and part of the Coulier or draw mechanism as the "driver", and by adjusting the distance between the stops it is possible to use a driver with constant traverse to drive the other member with variable traverse. C.

Split-foot Knitting Machine. Hemphill Co. B.P.638,880: Appl. and filing 18/7/1947; Publ. 14/6/1950; U.S.A. appl. 18/10/1939. The invention relates to means for knitting split fabric, including two feeding stations, means for feeding non-elastic yarn at both stations and elastic yarn at one of the stations, and needle-dividing means for presenting spaced needles to take the elastic yarn and to knit it with non-elastic yarn at the other station. Details are shown in ten sheets of machine drawings. C.

Aluminium and Compressed Fibre Picker. Arthur Burns. B.P.638,894: Appl. 16/12/1947; Filing 5/1/1948; Publ. 14/6/1950. The claim is for a loom picker having an aluminium body, compressed fibre bushings to receive the spindle, and a compressed fibre insert in a cylindrical recess in one face to receive the impact of the shuttle. C.

Tension Indicating Device. English Electric Co. Ltd., Allan Asbury, and G. R. Wilson. B.P.638,941: Appl. 5/1/1948; Filing 27/1/1949; Publ. 21/6/1950. Apparatus for providing a continuous indication of the tension in a strip or other linear material passing between two spaced members of a treating machine (for example, running yarn or fabric) comprises a transverse member that engages the material between the spaced members and is mounted on the free ends of cantilever-supported springs arranged so that when tension is applied the member is deflected from a predetermined position against the force of the springs, the deflection being indicated by electrical means involving the use of rheostats coupled to the springs. C.

Plastic and Light Alloy Bobbin. Craven Nicholson. B.P.638,946: Appl. 12/2/1948; Filing 7/2/1949; Publ. 21/6/1950. The claim is for a bobbin that has a light-alloy barrel with flanged die-cast metal plugs at its ends, and a plastic flange (*e.g.*, plain or laminated phenol-formaldehyde resin) at one or both ends, secured by the plugs. C.

Felt: Production from Smooth-surfaced and Straight Fibres. C. S. Francis, Jr. (to American Viscose Corporation). U.S.P.2,528,129 of 31/10/1950. Felt of substantial strength and high tenacity is made from a carded mixture of non-felting fibres and synthetic resin fibres. The resin fibres become tacky below the temperature at which the non-felting fibres are damaged. They are made tacky by heating during or after felting, cooling effecting fibre adhesion. In an example, a felt is formed of 90 per cent. of rayon staple and 10 per cent. of a co-polymer of vinyl acetate and vinyl chloride. W.

Axminster Pile Fabric. H. A. Reinhardt and C. R. Johnson (to Bigelow-Sanford Carpet Co. Inc.). U.S.P.2,509,351-2 of 30/5/1950. Hard-twisted wool yarns in hank form are damped by immersion in water, and steamed for 30 minutes at about 260° F. to set the kinks. They are then spooled under tension, wetted in hot water, and dried to set the yarn temporarily. After weaving, the legs of the pile are steamed at atmospheric pressure and dried to restore the kinks. The pile has a permanent twist and a soft texture, and fully covers the backing fabric (2,509,351). The fabric backing has stuffer warps, ground warps and double wefts. Due to the hard twist, the pile legs contain bends, which give a pebbly appearance to the surface of the pile (2,509,352). W.

4—CHEMICAL AND FINISHING PROCESSES

(A)—Preparatory Processes

Scutcher for Rayon Fabrics. ("Detordeuse pour tissus de rayonne.") A. Lambrette. *RUSTA*, 1949, 24, No. 1, 46. Contrary to views generally held it has been found possible to use a conventional scutcher with beaters for opening out rayon fabrics from rope form. It is essential that the feed should be in a vertical direction and that a considerable length of material should be available. C—4A.

Surface-Active Agents: Selection. I. Teplitz. *Text. Mfr.*, 1950, 76, October, 467-468. The relative merits of soaps and various types of synthetic detergents are discussed as a guide to the selection of suitable surface-active agents for particular dye-house purposes. C—4A.

Detergents in the Textile Industry. Anon. *Times Rev. Ind.*, 1950, 4, October, 10, 13. A brief account is given of the nature, classification, properties, and uses in the textile industry of modern detergents (surface active types). C—4A.

(B)—Boiling, Scouring, Degumming and Washing

Spooner Patent Washing Machine. Spooner Drying and Engineering Co., Ltd. *Text. Wkly*, 1950, **46**, No. 1187, 1598, 1601; *Text. Merc.*, 1950, **123**, No. 3220, 1009, 1011; *Dyer*, 1950, **104**, No. 12, 551-552. An illustrated description of the Spooner three-back washing machine is given. C—4B.

Acetate Rayon: Effect of Alkalis. ("La stabilité aux alcalis de la rayonne acétate.") E. Hermann. *RUSTA*, 1949, **24**, No. 2, 11, 13, 15, 17. Examination of the effect of various alkaline substances—ammonia, soda ash, and caustic soda—shows that acetate rayon may be subjected to alkaline treatment. Whilst the possibilities of applying the last two substances are limited, the uses of ammonia in the dyeing and finishing processing of acetate rayon, either by itself or as a component of a mixed fabric, are extensive. C—4B.

Scouring Agents. Part II: Action of Protective Colloids. ("Waschgrundstoffe II—Schutzkolloidwirkung–Waschversuche. K. Lindner. *Melliand Textilber.*, 1950, **31**, No. 1, 58-61. In addition to its surface activity the value of a detergent is dependent on its efficiency as a protective colloid, and this has been investigated by observing behaviour of detergents in the dispersion of carbon-black. The author describes experiments along these lines and comments on the results obtained, which indicate that the method has several weaknesses. It does, however, appear that protective colloid activity is not necessarily coincident with high surface activity. Best washing results are obtained where colloid activity is accompanied by good surface activity. C—4B.

(D)—Milling

Wool: Felting. C. S. Whewell. *Hosiery Trade J.*, 1951, **58**, (687), 48. Report of lecture given before the Midlands Section of the Society of Dyers and Colourists. Describes industrial felting of wool by milling, and shrinkage of wool blends. H—4D.

(E)—Drying and Conditioning

Drying: Its Relationship to Natural Moisture-content of Fibres. ("Über das Trocknen und den natürlichen Feuchtigkeitsgehalt der Fasern.") R. Dirks. *Text.-Praxis*, 1950, **5**, No. 1, 51-54. It is argued that the tendency in drying textile fibres, either as yarn or fabric, is to heat and dry to excess so that not only is the excess moisture on the surface and in the pores of the fibres removed, but also that moisture which is within the fibre and which is essential if the fibre is to retain its optimum properties. It is stated that the point at which electrostatic charges can be detected is critical; that is, it is an indication of completion of "natural" drying. Methods of detecting this point in various processes are indicated. C—4E.

Drying of Textile Packages. ("Gesteuerte Trocknung von Textilwickeln.") E. Mansmann. *Text.-Praxis*, 1950, **5**, No. 1, 69-72. The difficulties are discussed of drying textiles which have been processed in package form, for example, cheeses and warp-beams. Three principal methods are considered: centrifuging, vacuum extraction, and steaming. C—4E.

Infra-red Drying in the Textile Industry. ("Infrarot-Trocknung in der Textilindustrie.") H. Körner. *Text.-Praxis*, 1950, **5**, No. 1, 67-69. It is shown that infra-red drying of textiles can be competitive with existing methods, and that there are other advantages, such as non-impairment of fibre properties, and limited dependence on rate of airflow. It is claimed to be particularly useful in connection with anti-crease finishes as the time during which the material must be submitted to high-temperatures for bringing about condensation of the resin is much less than that required by hot-air processes. C—4E.

Infra-Red Heating and Drying. G. Broughton. *Paper Trade J.*, 1950, **131**, No. 17, 23-26. The elementary principles of heat transfer by radiation are discussed. In the case of thin materials the most efficient heating takes places when the infra-red radiation matches the infra-red absorption spectrum of the material. If this important factor is considered in choosing a suitable source of infra-red radiation, great savings in electrical energy can be effected. C—4E.

Jet-drying Process: Principles and Development. ("Das Düsentrockenverfahren und seine Entwicklung.") R. Friedmann. *Text.-Praxis*, 1950, **5**, No. 1, 59-62. This article consists of a discussion on the reasons for employing jets to bring hot air to the fabric surface and on the various patent applications connected with the use of jets in textile drying. C—4E.

Textile Drying Machines: Heat Efficiency. ("Wärmetechnische Untersuchungen an Trockenvorrichtungen.") W. Manschke. *Text.-Praxis*, 1950, 5, No. 1, 44-46. The efficiency of textile drying installations is discussed from the heat-engineer's point of view. C—4E.

Theory and Practice of Drying. ("Der Trocknungsvorgang in Theorie und Praxis.") H. Netz. *Text.-Praxis*, 1950, 5, No. 1, 11-15. In the drying process the efficiency of the air employed for removal of moisture is dependent on its own moisture content, that is, its relative humidity. Expressions are derived and graphs presented for calculating the best working conditions for several types of drying machine where the flow of air may be in the direction of travel of the cloth, against it, or across it. C—4E.

Drying: Equipment. *Knitted Outerwear Times*, 1951, 19, (7), 15. Note on re-designed drying machine produced by Smith Drum Co. The machine is claimed to eliminate the post-boarding step with nylon garments. H—4E.

(F)—CARBONISING

Carbonising: A Modern Plant. H. H. Haig and Sons Ltd. *Text. Merc.*, 1951, 124, 121; *Text. Mfr*, 1951, 77, No. 914, 65. The plant which has been installed has thermostatically controlled high-pressure hot water heating and soap and alkali tanks giving gravity feeds to the bowls. The burr-crushing machine has an infinitely variable willey speed, rollers and gearing of meehanite cast iron, and oil impregnated bearings requiring no attention. The minimum amount of handling takes place. W—4F.

(G)—BLEACHING

Peroxide Bleaching: Uninterrupted Process. N. N. Kuzub. *Tekstil. Prom.*, 1947, 7, No. 5, 30-32 (through *Amer. Chem. Abstr.*, 1950, 44, 8668^e). Details are given of a bleaching process in which simple fabrics are treated with a slightly acid solution of hydrogen peroxide, followed by treatment with a caustic soda-sodium silicate solution. Printed fabrics are given a special treatment before bleaching. C—4G.

Chlorine-bleached Cotton Fabric: Action of Aniline. ("Über die Einwirkung von Anilin auf chlorgebleichte Baumwollgewebe.") H. Stuhl. *Melliand Textilber.*, 1950, 31, No. 2, 118-119. An investigation into the cause of the pink discoloration of chlorine-bleached cotton fabric by the action of aniline, was carried out on grey-cloth, desized cloth, and desized and kier-boiled cloth. In each case specimens of the material were subjected to one of the following treatments: (*a*) chlorine bleach and sodium thiosulphate antichlor, (*b*) chlorine bleach and sodium bisulphite antichlor, (*c*) chlorine bleach and hydrogen peroxide antichlor, and (*d*) hydrogen peroxide bleach, exposure to aniline vapour following in every case. Rayon fabrics were similarly treated. It was found that only the chlorine-bleached material gave rise to the coloration, and it appears that removal of chlorine by the antichlors is never complete. C—4G.

Sodium Chlorite: Applications in Textiles. ("Le chlorite de soude $NaClO_2$ et ses applications textiles.") A. Blanchart. *Rayonne*, 1950, 6, No. 4, 115-117. Sodium chlorite in acid solution is a less active oxidising agent than sodium hypochlorite in alkaline solution and is therefore much less liable to degrade cotton or rayon fibres. Moreover, under suitable conditions no residual chlorine remains in the fibre so that anti-chlorination is unnecessary. The properties of this new bleaching agent are discussed particularly in relation to its textile applications. C—4G.

Textile Bleaching: Literature Survey: Part I. J. F. Hagen. *Amer. Dyest. Rep.*, 1950, 39, No. 20, P663-666; No. 21, P703-714; No. 22, P739-750. In the first part of this comprehensive survey of the literature on textile bleaching (from 1900 to the present day), the continuous peroxide system and the semi-continuous hypochlorite system are covered. A short abstract is given with each reference. C—4G.

(H)—MERCERISING

Mercerisation: Some New Considerations. ("Neuere Erkentnisse auf dem Gebiete der Mercerisation.") K. Schwertassek. *Melliand Textilber.*, 1950, 31, No. 3, 188-192. A theory has been developed to explain the fundamental process involved in the reaction between iodine and cellulosic material. The iodine number is an expression of the degree of crystallinity, which is considerably

reduced by mercerisation. The sensitivity of mercerised material to hot wet treatment is considered to be due to recrystallisation effects. C—4H.

(I)—DYEING

Dyeing and Printing: Use of Varying Pressures in Sealed Vessel. ("Nouveau procédé de teinture et d'impression sur tissus.") Anon. *RUSTA*, 1949, 24, No. 1, 23-24. It is claimed that both dyeing and printing of all manner of textile fibres and fabrics are greatly improved in respect of depth of shade and penetration, and consequently fastness, by subjecting the material to alternating high and low pressures during processing. Essentially, the method involves the introduction of the dye-liquor into an autoclave, in which the pressure is lower than that of the atmosphere and which contains the material to be dyed, and then replacing the liquor with high-pressure steam. This procedure is carried out several times in rapid succession. For printed fabric the method is similar except that the pressure variation is effected by steam only, the material having been previously printed and dried. One of the principles underlying the process, which is said to effect considerable economy in time and heat consumption, is the removal of air from within the fibres, thus allowing the dyestuff greater access to the interior. C—4I.

Hosiery Dyeing and Finishing. E. R. Trotman. *Text. Rec.*, 1950, 68, October, 91-92. Continuing a survey[1] of developments in the dyeing and finishing of hosiery, the author deals with advances in chemical technology. Wetting agents, detergents, "sequestering" agents (Calgon and Irgalon B.T.), optical bleaching agents, and improved dyeing techniques are among the topics mentioned. ([1]*J. Textile Institute*, 1951, 42, A94.) C—4I.

Rayon Dyeing, IX: Cellulose Acetate Rayon. A. G. Tyler. *Brit. Rayon & Silk J.*, 1950, 27, October, 48-49 (to be contd.). Special procedures for the application of azoic and vat dyes to cellulose acetate rayon are described. The use of swelling agents to increase the affinity of acetate rayon for acid and direct dyes is also considered. (For previous part, see *J. Textile Institute*, 1951, 42, A93. C—4I.

Rayon Locknit Fabrics: Dyeing and Finishing. A. F. Cheshire. *Brit. Rayon & Silk J.*, 1950, 27, October, 50-51 (*to be contd.*). The preliminary examination and scouring of rayon locknit fabrics prior to dyeing, are discussed. C—4I.

Saponified Cellulose Acetate: Affinity for Direct Dyes. ("Étude de l'affinité pour les colorants directs des acétates de cellulose saponifiés.") J. Rosset and R. Paris. *Bull. Soc. chim. Fr.*, 1950, Nos. 3-4, 334-340. Investigation has shown that the commonly accepted idea that saponified cellulose acetate has a greater affinity for direct colours than partially de-acetylated cellulose acetate is erroneous. It is shown that whatever method of de-acetylation is used, homogeneous or heterogeneous, an intermediate stage of highest affinity is obtained. The experimental details of the investigation are given. C—4I.

Hosiery Finishing Plant. Anon. *Text. World*, 1950, 100, October, 96-99. A series of photographs is given showing some of the operations in a modern American plant for the dyeing and finishing of hosiery. C—4I.

Improved Package-Dyeing System. C. H. Leach. *Text. World*, 1950, 100, October, 92-93. A brief illustrated description is given of a new American dye-house for package-dyeing which has been designed to reduce handling to a minimum. C—4I.

Indanthrene Brilliant Blue 4G. ("Indanthrenbrillantblau 4G—ein neuartiger Küpenfarbstoff.") F. Gund. *Melliand Textilber.*, 1950, 31, No. 1, 46-47. A description is given of the dyeing and fastness properties of the new vat dye, Indanthrene Brilliant Blue 4G. Details are given of its behaviour in caustic soda solution, the concentration of which need only be relatively weak on account of the ease of reduction and solution of the dyestuff. The conditions for optimum absorption rate of the dyestuff are given. The machine dyeing of staple fibre and rayon on warp beams and in cheese-form is also discussed. C—4I.

Jig Dyeing: Practical Hints. ("Conseils practiques pour la teinture sur jigger.") R. Sansone. *Rayonne*, 1950, 6, No. 4, 118-120. These practical hints on the running of dye jigs include a brief description of the operation of a number of jigs by one man so that each jig is at a conveniently different stage, for example, desizing, washing, loading, and dyeing. Jigs used for desizing should

never be used for dyeing because of the possibility of size remaining on the rollers causing stains. Conditions for using different types of dyestuffs are briefly surveyed. A method of ensuring an even rate of passage of material through the bath, irrespective of the changing diameter of the rollers, is described. C—4I.

Naphthol Dyeing Techniques. R. H. Nuttall. *Text. J. Austral.*, 1950, 25, No. 6, 578, 580, 581, 582. Practical aspects of naphthol dyeing are discussed. Techniques for dyeing hosiery, packages, beamed yarn, cotton and rayon raw-stock, and piece goods, are described. C—4I.

Package Dyeing Developments. T. H. Jackson. *Text. Merc.*, 1950, 123, No. 3220, 1012, 1015, 1016. The package dyeing of yarn cheeses produced on the Barber-Colman spooler is discussed. After considering the advantages and disadvantages of the process a brief description of the dyeing machinery is given. The application of direct, sulphur, naphthol, and vat colours by this process is described. C—4I.

Package Dyeing Plant. W. A. Thomason. *Text. World*, 1950, 100, October, 112-113. A brief illustrated description of a new American package dyeing plant is given. C—4I.

Logwood and Its Application. ("II.—Dyeing of Wool on Chrome Mordants: Iron Mordanting.") *Dyer*, 1951, 105, 94-97. A general review. The mechanism of mordanting, fastness to light, dyeing of loose wool, rags and hosiery are mentioned. The "Sequence" process is described. W—4I.

Dyeing of Half-wools and Linseys. *Wool Rec.*, 1951, 79, 803-804. A brief account of methods of dyeing uncarbonised low-grade materials. Owing to the high cost of wool and the shortage of raw materials, it is now considered more economic to dye the mixed fibres than to remove the non-wool constituents by carbonising. W—4I.

Dyeing: Equipment. *Knitted Outerwear Times*, 1951, 19, (11), 20-1. Describes development by the General Dyestuff Corporation of a continuous dyeing unit for the dyeing and processing of fibres, stock or staple. H—4I.

(J)—PRINTING

Glass Textiles: Screen Printing. Anon. *Text. Rec.*, 1950, 68, October, 96. Brief details are given of the "Hycar-Quilon" process for the screen printing of Fiberglas fabrics. (See also *J. Textile Institute*, 1950, 41, A557.) C—4J.

Polyvinyl Films: Gravure Printing. M. A. Chavannes. *Modern Plastics*, 1949, 27, No. 4, 85-88, 152, 155. Vinyl films may be printed by the fabric drum type or intaglio printing machine as used for textile fabrics, but the best results are achieved with the rotogravure machine. The principles of gravure printing are described including the production of the printing cylinders and half-tone colour printing. Improvements that are needed in inks, techniques, and machinery in order to increase the sales of printed vinyl films are discussed. C—4J.

Screen-printing: Drying of Prints. ("Trocknen von Filmdruckwaren.") K. Scholl. *Text.-Praxis*, 1950, 5, No. 1, 32. A brief survey is made of methods available for drying screen-printed materials. C—4J.

Screen Printing: Star Ager. ("Ein neuer Sterndämpfer besonders für Filmdruckereien.") Anon. *Text.-Praxis*, 1950, 5, No. 1, 76; *Text.-Praxis* (*Eng./Span. Edn.*), 1950, 47. A description is given of the patent "Dedeko" machine, designed for steaming printed fabrics, especially screen-printed fabrics. C—4J.

"Zamak": Zinc Alloy for Textile Printing. ("Le Zamak et ses utilisations dans l'industrie textile.") M. Baudot. *Industrie text.*, 1950, 67, 321. Zamak No. 2 is a recently developed zinc-aluminium-copper alloy which has all the advantages of other metals, which like copper are used in the textile printing industry, without some of their disadvantages. Its constitution and properties are discussed. C—4J.

Calico Printing: Use of Chrome Mordants. ("Über den Chemismus des Chrombeizendrucks.") H. Barth. *Melliand Textilber*, 1950, 31, No. 2, 120-125. After a brief survey of the development of the use of chromium compounds in calico printing the article goes on to discuss the structure of those compounds and their application under various conditions. C—4J.

Gum Tragacanth: Use as Thickening Agent in Printing. ("Tragant und seine Eignung als Druckverdickungsmittel.") W. Jülicher. *Melliand Textilber.*, 1950, 31, No. 1, 51-54. Both the quality and behaviour of gum tragacanth are so variable that its use in the textile printing industry is not very satisfactory. Its behaviour on dilution is examined. The original gel is slowly converted to a sol so that thickened solutions tend to become thin, and the gel/sol ratio determines the printing efficiency. A brief survey is made of alternative thickening agents. C—4J.

Printed Fabrics: Design. Anon. *Text. Merc.*, 1950, 123, No. 3221, 1053-1054. The design of printed fabrics is considered briefly from the points of view of the manufacturer, the consumer, the designer, and the design buyer. C—4J.

Printing and Dyeing Faults: Recognition and Adjustment. ("Fehlerquellen in Druckerei und Färberei, deren Erkennung und Behebung.") W. Popp. *Textil-Praxis*, 1950, 5, No. 2, 117-120. The origin of faults discovered during or after printing and/or dyeing is examined in several cases. Appropriate treatments (where possible) and safeguards against recurrence are suggested. Amongst the cases discussed are included: streaks due to faulty singeing; faulty washing after the caustic soda crêpeing process; streaks caused by an apparently faultless printing roller; stripping of substantive dyed fabrics; slippage of very smooth fabrics during printing; and bad whites on discharging. The value of the microscope in detecting the source of faults is pointed out. C—4J.

Screen-printing: Partial Mechanisation. ("Filmdruck teilmechanisiert—Anwendungsmöglichkeiten, Vorteile und Nachteile.") A. Roth. *Melliand Textilber.*, 1950, 31, No. 1, 55-57. In view of the still fluid state of the development of a completely mechanised screen-printing process, and also of the several advantages of the old manual methods (for example, accuracy of alignment), there is much to be said for restriction in the degree of mechanisation. Some of the advantages of partial mechanisation are the maintenance of accuracy, the non-redundancy of existing manual apparatus, the considerably lower cost as compared with the installation of complete mechanisation, and the absence of increased demand on space. Nevertheless, partial mechanisation does possess disadvantages with respect to the purely manual processes and these are discussed. A new design for a screen carrier promises a solution to the present problem. It is easy to handle, readily transportable, requires no guide rails, involves no increase in space requirements, and can be adapted to any of the existing manual methods. C—4J.

Sodium Alginate ("Algin") as Thickening Agent in Printing Pastes. ["Algin (Natrium-Alginat) als Verdickungsmittel in Textildruckpasten."] E. K. H. Schmidt. *Melliand Textilber.*, 1950, 31, No. 3, 194-196. Sodium alginate is a very valuable thickening agent for textile printing pastes. Whilst remaining unaffected by alkaline conditions, it is sensitive to acids. It should never be brought into contact with hot water since this impairs its viscosity and elasticity. Its solubility in cold water is excellent and this is a valuable property in that it can readily be removed after printing so that any stiffening effect on the material is avoided. In contrast to gum tragacanth, the viscosity of sodium alginate is constant, and filterable impurities are absent. Formulæ for use with various colouring agents are presented. C—4J.

(K)—FINISHING

Crease-resistance: Introduction of Synthetic Resin into Fibre. ("Der Turbo-Fixierer, System Neuhaus.") F. Berger. *Text.-Praxis*, 1950, 5, No. 1, 65-66. The introduction of resins into the interior of the fibre has manifold uses, for example, improvement of crease resistance, reduction of swelling and hence greater dimensional stability of the fabric, increased fastness of certain dyestuffs and greater permanence of embossed effects. The recently developed pigment printing process, which also makes use of synthetic resins for fixing the colour, requires analogous treatment to the simple resin impregnation process, namely, high temperature. It is claimed that the best resin condensation method is that employed in the Neuhaus Turbo-fixer in which air, electrically heated in a separate chamber, is blown by means of turbines into the treatment chamber where it is equally distributed over the material. The machine is described and illustrations are given. C—4K.

Dulling of Rayon with Tin Salts. ("Procédés de matage de la rayonne au moyen de sels d'étain.") Anon. *RUSTA*, 1949, **24**, No. 1, 49-51. Various methods of producing matt rayon filaments are briefly surveyed. Factors affecting the efficiency of different treatments are discussed. C—4K.

Glazed Finish for Fabrics. ("Moderne Chintzausrüstung.") K. Quarthal and K. Beideck. *Text.-Praxis*, 1950, **5**, No. 1; 41, *Text.-Praxis* (*Eng./Span. Edn.*), 1950, 29. This is a short discussion on the use of synthetic plastics for obtaining a water-proof and water-resistant glaze finish on cotton fabrics. A much higher resistance to cracking is obtained as compared with the older type of preparation such as starch, glue, dextrin, and mixtures of cellulose derivatives with wax. C—4K.

Viscose Rayon: Treatment with Formaldehyde. ("L'action du formol sur le sthénosage.") E. M. Marguin. *RUSTA*, 1949, **24**, No. 1, 6-18 (9 pages). The principles underlying the treatment of viscose rayon with formaldehyde in order to increase the wet-strength are outlined. A survey is made of the research into the best conditions of treatment ("formalising"), the resulting properties of the treated material, and the mechanism of the reaction between viscose and formaldehyde. Various commercial procedures are discussed on the basis of information contained in patent specifications. C—4K.

Nylon Fabrics: Pleating. British Nylon Spinners Ltd. *Text. Merc.*, 1950, **123**, No. 3219, 977-978. Instructions are given for the setting of permanent pleats in either woven or warp knitted nylon fabrics. C—4K.

Plastics in the Textile Industry. N. Curtis. *Text. J. Austral.*, 1950, **25**, No. 6, 628-631. Some of the uses of plastics in the textile industry are outlined. These cover plastic fibres, plastic accessories for machinery, resin sizes for synthetic yarns, and resin finishes. C—4K.

Resins: Application to Textiles. R. M. Fischer. *Text. J. Austral.*, 1950, **25**, No. 6, 566-577 (7 pages). A paper delivered before the American Association of Textile Technologists and previously reported: *J. Textile Institute*, 1951, **42**, A19. C—4K.

Water-stains and Others Arising During Finishing. ("Wasser- und andere Flecken in der Textilveredlung.") O. Merz. *Melliand Textilber.*, 1950, **31**, No. 3, 208-211. The author gives an account of his extensive experience of the investigation, prevention and attempts at removal of stains on materials arising during finishing processes. C—4K.

Raising: Features of the Scholaert Machine. A. C. Scholaert. *Text. Mfr*, 1951, **77**, No. 914, 77. A patent device ensures smoothness during roller rotation on a minimum adjustment for light cloth, in addition to maximum adjustment for tightly woven or heavy cloth. It is claimed that the roller angular speed can be reduced to an extent hitherto unknown, that the cloth contacting area is large, that highly skilled operatives are not necessary, and that less space is required for each machine. W—4K.

Lambskin Pile Fabric: Processing. *Dyer*, 1951, **105**, 223-224. The scouring, hydrogen peroxide bleaching, dyeing, raising, tentering, and back-filling of lambskin pile fabric for bootee linings are described. Special reference is made to the avoidance of faults in bleaching. W—4K.

Finishing: Influence of Fibre Length. A. J. Hall. *Hosiery Times*, 1951, **24**, (262), 53-4, 57. Discusses the influence of fibre length on felting and shrinkage of wool fabrics and on lustre and appearance of rayon fabrics. The water repellency of fibres and the various methods of waterproofing are also discussed. H—4K.

Shrinkage: Resistance; Nomenclature. *Knitted Outerwear Times*, 1951, **19**, (9), 15. Note on Federal Trade Commission meeting which is to consider the rules governing the use of the terms "shrink-proof", "shrink-resistant", *etc.*, for wool garments. H—4K.

(L)—PROOFING

Cellulose Ethers: Application to Textiles. N. Lakshminarayanaiah. *Papers Amer. Assoc. Text. Tech.*, 1950, **5**, September, 173-181. The chemistry, properties, and uses (as finishing agents) of cellulose ethers are briefly described. Methods of preparing solutions of these ethers, namely in organic solvents, alkali, and water, are indicated, together with the means of application of the solutions to the fabric. Laboratory scale experiments have been carried out on

the usefulness of some water soluble and alkali soluble cellulose ethers as finishing agents. Tests applied to the finished fabric samples were as follows: air permeability, tensile strength, stiffness, wrinkle recovery, abrasion, and wash fastness. The results are presented (*ibid*, pp. 182-190) and briefly discussed. A bibliography of 32 references given. C—4L.

Copper Naphthenate: Manufacture and Application. A. Davidsohn. *Industr. Chem.*, 1950, **26**, September, 385-389. The manufacture of copper naphthenate both by the precipitation method and the fusion method is described. Mention is also made of some special methods of production. The uses of copper naphthenate (and other naphthenates) are discussed with special reference to the rot-proofing of textiles. A review of recent literature on the subject is made. C—4L.

Natural and Synthetic High Polymers for Proofing. S. Reiner. *Gummi u. Asbest*, 1950, **3**, 171-172; 200-202 (through *J.R.A. Brit. Rubber Manufrs*, 1950, **19**, No. 9, 740). An account is given of the practical use of natural and synthetic high polymers in proofing processes. C—4L.

Polyvinyl Chloride: Stabilization. R. E. Lally and F. R. Hansen. *Modern Plastics*, 1949, **27**, No. 4, 111-112, 114, 116, 156-162. After a brief indication of the degradation reactions which can occur when polyvinyl chloride or copolymer is subjected to heat or light, types of stabilizers are considered. Heat stabilizers dealt with include barium, strontium, lead, calcium, and tin soaps, inorganic compounds, epoxy compounds, amines and antioxidants. Mention is also made of the synergistic action of certain stabilizers when used with others. Some light stabilizers (cadmium soaps, phosphates, and ultra-violet screeners) are discussed. Factors affecting the choice of a stabilizer are discussed under (*a*) formulation, (*b*) processing conditions, and (*c*) end use of the vinyl article. Finally, some methods of testing stabilizers are considered, namely, heat testing, light testing, moisture testing, and opacity testing. C—4L.

(M)—Subsequent Processes

Karakul and Seal Fur Skins: Aging. E. T. Steiner and E. R. Hosterman. *J. Res. Nat. Bur. Stand.*, 1950, **45**, 317-322. Deterioration of these two types of fur skin occurred during storing under conditions considered non-injurious. A loss of strength of 25-40 per cent. was found and there was a change in some of the chemical properties. The weakened pelts showed increased soluble nitrogen and water extractives and lower grease contents than less aged skins. It is suggested that the presence and quantity of copper (introduced during dyeing) in the weakened pelts causes deterioration. Iron salts do not have any appreciable effect. It is also stated that the extent of deterioration can be measured by determining either burst, breaking strength, or stitch-tear (furrier-sewn) values. W—4M.

Patents

Bleaching Wool. Wolsey Ltd., P. Alexander and C. Earland. B.P.637,150 of 10/5/1950. Wool is padded in a dilute aqueous solution of hydrogen peroxide at not more than 50° C. and at *pH* 6-10 until the wool is thoroughly wetted; it is then freed from excess solution, and heated at 70-100° C. to effect bleaching without substantial evaporation of water, and is finally rinsed. At 85° C., maximum whiteness is obtained in approx. 1½ hr. For a very intense white, optical bleaching agents can be added to the rinsing liquor. The process is continuous and is particularly applicable to chlorinated wool. W.

Positively-charged Latex Dispersions: Application in Colouring and Proofing. British Rubber Producers' Research Association and C. M. Blow. B.P.638,090: Appl. 31/7/1947; Filing 26/7/1948; Publ. 31/5/1950. A process for the treatment of fibre, yarns and fabrics with insoluble pigments, dyes, waxes, metallic soaps, moth-proofing agents, insecticides, and rot-proofing agents, consists in dispersing the substance in an aqueous solution of a cationic soap so that the particles carry a positive charge, mixing the dispersion with a latex or rubber dispersion that has also been treated with a cationic soap, and applying the mixture (adjusted to *pH* 7 to 10) to the textile material which has previously acquired a negative charge by giving it a suitable alkaline treatment. The examples relate to (1) moth-proofing of woollen carpet yarn by D.D.T., (2) colouring worsted fingering yarn with a red pigment, (3) colouring carded cotton web with carbon black, and (4) printing knitted wool fabric so that the pigment-coloured printed portions resist raising. C.

Onium Dyes: Application in Printing. Raymond Thornton and Imperial Chemical Industries Ltd. B.P.638,124: Appl. 17/3/1948; Filing 16/3/1949; Publ. 31/5/1950. The claim is for a printing process that depends on the fact that when "onium" dyes (*e.g.*, of the phthalocyanine series) are fixed on a textile material they are no longer susceptible to alkaline reducing agents. The example describes the production of a bright green print on a white ground by printing with a mixed paste containing (1) the blue dye obtained by treating copper tri-(chloromethyl)-phthalocyanine with tetramethylthiourea, and (2) Caledon Printing Yellow GNS, drying, padding through alkaline Formosul, steaming to reduce the vat colour, and re-oxidising this in dichromate solution. C.

Direct Dyeings: Fixation. Sun Chemical Corporation. B.P.638,323: Appl. and filing 18/11/1947; Publ. 7/6/1950; U.S.A. appl. 30/4/1947. Direct dyeings on cellulosic textiles are rendered fast to water by impregnation or padding, followed by drying, with a solution of what appears to be a diquaternary ammonium compound, obtained by condensing formaldehyde with a higher aliphatic amine (12-18 C atoms) and alkylating the product with a dialkyl sulphate (2-4 C atoms, *e.g.*, diethyl sulphate). C.

Diazotisable Disazo Dyes: Application to Cellulosic Materials. K. A. J. Chamberlain, N. H. Haddock, and Imperial Chemical Industries Ltd. B.P. 638,399: Appl. 8/3/1948; Filing 28/1/1949; Publ. 7/6/1950. Disazo dyes that may be diazotised on the fibre and coupled with β-naphthol to give trisazo dyes are obtained by coupling diazotised 4-aminoazobenzene-4'-sulphonic acid or 4-amino-2':3-dimethylazobenzene-4'-sulphonic acid with 2-(3'-amino-4'-methylbenzoyl)-amino-5-napthol-7-sulphonic acid. The examples refer to fast bordeaux shades on cotton. C.

Heavy Fabric Steamer and Ager. C. L. Wall. B.P.638,402: Appl. 16/3/1948; Filing 16/3/1949; Publ. 7/6/1950. The invention relates to means for avoiding the local formation of pockets of gas or superheated steam in the steaming or ageing of heavy, very wide or thick fabrics, by the alternate application of evacuation and admission of pressure steam. In the preferred form the fabric is batched with a back-grey on a skeleton tube one end of which is blanked off and the other adapted for attachment to a seating in a cylindrical chamber which is connected with an exhaust pump. The chamber can be made steam-tight when the tube with its cloth is run in on a track and placed in position. The chamber is exhausted and steam is slowly admitted from a perforated pipe between the cylinder wall and the tube wall and any residual gas is run off *via* a by-pass. This is then closed and the steam pressure is raised as desired. C.

Aminotriazone Pyrophosphates: Application in Flame Proofing. American Cyanamid Co. B.P.638,434: Appl. and filing 14/7/1947; Publ. 7/6/1950; U.S.A. appl. 20/8/1946. Cellulosic materials are rendered flame-resistant by the incorporation of 5-30 per cent. of an aminotriazine pyrophosphate. The agent may be applied as such in aqueous suspension, or formed in the material by the interaction of another aminotriazine salt and a pyrophosphate, or by using a substance that gives rise to aminotriazine pyrophosphate on heating, for example, guanidine phosphate + urea. Nine examples are given, with results of tensile and flaming tests on various cotton fabrics. C.

Linen Fabric: Crease-resisting Finish. Linen Industry Research Association, D. A. Derrett-Smith, and R. W. Kinkead. B.P.638,593: Appl. 27/11/1947; Filing 19/10/1948; Publ. 14/6/1950 [Addition to B.P.618,184*]. Linen fabric is allowed to shrink in caustic soda without tension and then, before or after scouring, washing and drying, is put under tension without extending it to the original dimensions, impregnated with a urea/formaldehyde partial condensate, "cured" and finally mercerised under tension. (*See *J. Textile Institute*, 1950, 41, A23.) C.

Stabilised Starch Dispersion. R. T. Vanderbilt Co. Inc. (assignees of F. H. Denham). B.P.638,996: Appl. and filing 1/4/1947; Publ. 21/6/1950; U.S.A. appl. 5/6/1046. The invention relates to the stabilization against viscosity change of acid- or enzyme-converted starches, by the incorporation in the dispersion of 0·1-5 per cent. (especially 0·5 to 1 per cent.) of a partial ester of a long-chain fatty acid and a straight-chain polyhydric alcohol (or an anhydride thereof) in which partial ester there is at least one oxyalkylene group. The

"partial esters" used are classified into (I) "partially esterified dendro-polyhydroxy compounds", *e.g.*, "6-dendro-glucose mono-stearate", obtained by esterifying with stearic acid the product of the interaction of glucose (1 mol.) with ethylene oxide (6 mols.); (II) "catenylated partial esters of fatty acids with polyhydroxy compounds", *e.g.*, "sorbitan mono-stearate 20-caternyl ethylene oxide", obtained by condensing sorbitan mono-stearate (1 mol.) with ethylene oxide (20); and (III) "partial esters of aliphatic acids with polymerized polyhydric alcohols", *e.g.*, nonea-ethylene glycol mono-stearate. The examples record viscosity measurements in centipoises made at various rates of rotation in the Brookfield "Synchro-Lectric" viscometer. C.

5—ANALYSIS, TESTING, GRADING AND DEFECTS

(A)—Fibres

Cellulose Fibres: Behaviour on Drying. ("Das Verhalten der Cellulosefasern beim Trocknungsprozess.") A. Schaeffer. *Text.-Praxis*, 1950, **5**, No. 1, 3-6. The effect of repeated washing and drying on various kinds of cellulose fibres has been investigated in view of the fact that both during processing and in subsequent use the fibres are subjected to such treatment. Repeated wetting and drying causes alternating swelling and contraction. Furthermore, dilute solutions of chemicals sometimes remain in the fibre despite washing and these become more and more concentrated on drying so that physical and/or chemical modifications in fibre characteristics may occur. Drying temperature and duration of drying are also very important. Procedures adopted for the investigation are described and data presented in graphical form. **C—5A.**

Cotton Fibres: Detection of Damage. T. Shinozaki. *Bull. Nagrya Inst. Technol.*, 1949, **1**, 146-150 (through *Amer. Chem. Abstr.*, 1950, **44**, 8665[e]). A method for the detection of mechanical and chemical damage produced in cotton fibres using caustic soda solution has been investigated. Suitable experimental conditions are described. **C—5A.**

Density of Silk. R. W. Moncrieff. *Brit. Rayon & Silk J.*, 1950, **27**, October, 45. A "theoretical" density has been calculated for silk (crystalline region) which is in good agreement with the apparent density measured when silk is immersed in water. **C—5A.**

Rubber Fibres: Properties and Textile Applications. ("Elasticità, resistenza e titolo dei filati di gomma.") Anon. *Riv. Tessile*, 1949, **4**, No. 8, 803-804. The physical, mechanical and other properties of vulcanised rubber fibres are summarised. The value of their elastic property and their applications in, for example, clothing and orthopædic appliances, are discussed. In addition to individual rubber fibres, those covered by means of cotton, silk, and rayon, are mentioned. Methods of indicating the count of square-section, round-section, and covered rubber fibres are given. **C—5A.**

Textile Fibres: Nature, Properties, Processing, and Dyeing. Parts I-III. ("Neueves von Fasern, chemischer Textilveredlung und Farbstoffen." I, II, III.) K. Brass. *Koll. Zschr.*, 1949, **113**, No. 2, 110-120; **114**, No. 3, 174-180; 1950, **116**, No. 1, 33-46. This detailed survey of recent literature is divided into three sections: A. fibres of vegetable origin, namely, cotton, bast fibres and regenerated celluloses; B. fibres of animal origin, namely, wool, silk and regenerated protein fibres; and C. fibres of mineral origin, namely, glass fibres. The schemes in each section are similar and deal with the fibre from the cultivation or production stage up to the finishing processes. The discussions include fibre structure and properties, factors causing damage or degradation, processes such as kier boiling, bleaching, scouring (including soaps and auxiliaries), felting and anti-felting treatments, shrink-resist treatments, dyeing and printing (including work on dyestuff structure), and finishing. **C—5A.**

Textile Materials: Standards and Testing. American Society for Testing Materials, Committee D-13. *A.S.T.M. Standards on Textile Materials*, 1950, 584 pp. This handbook contains, in their latest form, 90 specifications, test methods, and tolerances developed by the above committee. Other sections give photomicrographs of common textile fibres and of defects in woven fabrics, a glossary of textile terms, and terms relating to the handle of fabrics. **C—5A.**

Textile Testing: Definitions of Italian Terms. ("La terminologia delle prove sui tessile.") Commissione Tecnica Laniera. *Riv. Tessile*, 1949, 4, No. 11, 1145, 1147-1150. A list of standardised textile testing terms, together with their definitions, has been prepared on behalf of the Italian Commissione Tecnica Laniera. C—5A.

Viscose Filaments: Effects of Drying on Swelling Power. (Zur Kenntnis der Zellulosefasern. 10. Über die Vorgänge beim Trocknen von Zellulosefasern. 11. Die Wirkung saurer Katalysatoren beim Trocknen von Zellulosefasern.) K. Lauer, O. Bezner, and O. Dobberstein. *Koll. Zschr.*, 1950, 116, No. 1, 28-31, 31-33. (1) Starting with fresh ("never dried") viscose filaments, the authors have studied the effects of the temperature and duration of drying, of tension during drying, and of repeated drying and steaming on the swelling power and other properties of the material as measured by the absorption of water and Congo red, the heat of absorption, the breaking load and extension, and the solubility in cuprammonium and in caustic soda. The tabulated data show that with increasing drying temperature the swelling power and affinity for dye decline, that some of the effects are partially reversible, and that increased duration of drying, repetition and steaming lead to fundamentally the same phenomena. The effects are ascribed to the establishment of cross-linkages in the amorphous regions of the fibre structure. (2) Similar observations are recorded on viscose filaments that had been dried with various organic acids (especially oxalic) and with various acid sulphates, with and without buffers. The results support the view that in the drying of viscose filaments reversible and irreversible hydrogen-bond formation occurs. In the presence of the acidic catalysts, however, a new type of linkage is created, characterised by diminished solubility of the filaments in cuprammonium; values as low as 40 per cent. are recorded, compared with 97 per cent. for the parent material. C—5A.

Egyptian Cotton Crop, 1949: Spinning Test Report. M. A. Kilany, A. A. Youssef, and S. E. Sadek. *Egypt. Cotton Gaz.*, 1950, 10, May, 59-60. A spinning test report for 10 varieties of Egyptian cotton of the 1949 crop is presented. The data include strength of 60s carded yarn, staple length, and hair weight. C—5A.

Egyptian Cottons: Intrinsic Strength. A. A. Youssef. *Egypt. Cotton Gaz.*, 1950, 10, May, 29-31. A correlation graph for yarn strength and hair measurements is presented on which data for various cottons have been plotted. The results show that Egyptian cottons are of higher intrinsic strength than the majority of other varieties. C—5A.

Fibre Length: Standardised Method for Determination. ("FaChemFa—Prüfvorschrift.") A. Zart. *Melliand Textilber.*, 1950, 31, No. 2, 94-95. The first of a series of standard methods to be devised by a "Committee for the Development of Testing Methods for Fibres", deals with fibre length. After prescribing the procedure for obtaining a standard sample, the use is recommended of a staple-combing device for analysing the fibre lengths. C—5A.

International Classification for Raw Silk. ("Die Internatiale Klassifikation von Rohseide.") E. Wagner. *Melliand Textilber.*, 1950, 31, No. 3, 157-160. Details are given of the agreement reached at the Zurich Silk Conference, 1950, on standard methods of testing and classification of raw silk. C—5A.

Modern Synthetic Fibres. ("Neuere vollsynthetische Fasern.") K. Fabel. *Melliand Textilber.*, 1950, 31, No. 2, 110-112. The structure and properties of the more recently developed synthetic fibres are discussed. These include Vinyon N, Orlon, and Terylene. C—5A.

Rayon Fibres: Variation of Shape, Internal Structure, and Properties. H. L. Bredée. *Rayon Revue* (English Issue), 1950, No. 3, 19-28. This is an English translation of an article in Dutch. For the reference and abstract, see *J. Textile Institute*, 1949, 40, A464. C—5A.

Single Fibres: Physical Data: Use of Punched-Card Techniques. H. Wakeham and J. H. Wakelin. *Text. Res. J.*, 1950, 20, No. 9, 605-612. The use of punched-card methods in the evaluation of the physical properties of single textile fibres is discussed. The method is explained with the aid of data obtained for cotton fibres. C—5A.

Textile Fibres: Identification. E. A. W. Boyce. *Text. J. Austral.*, 1950, 25, No. 6, 605-606. Some visual, burning, chemical, and staining tests for the identification of textile fibres are briefly described. C—5A.

Textile Fibres: Identification. J. M. Preston. *J. Textile Institute*, 1950, 41, No. 9, P679-691. Tests which may be used to identify textile fibres are discussed. These include heat tests, density determinations, swelling and solubility measurements, examination of molecular patterns, colour reactions, and microscope examination. C—5A.

"Wool as an Apparel Fibre." W. H. Rees. *Text. Res. J.*, 1950, 20, 592-603. Rees' resilience data are incorrectly quoted by Hopkins in his article on wool as an apparel fibre (*J. Textile Institute*, 1950, 41, A524). W—5A.

Tops: Guaranteed Micron Measurement. *Fibres*, 1951, 12, 50-51. A brief description of the official United States standards for tops, which are based entirely on the fineness of the fibres. The author states that the British view is that the traditional methods of judging tops are superior to the microscope measurement method, since other factors are also assessed. W—5A.

Animal Fibres: The Effect of Dilute Salt Solutions on Mechanical Properties. H. M. Burte. *Text. Res. J.*, 1950, 20, 880-881. Examination by repeated extension-contraction cycles has been used to determine whether the state of strain has any accelerating effect on the rate of interaction between wool fibre and sodium chloride solution. No accelerating effect was observed. Divergent results obtained by other workers in this connection are discussed. W—5A.

Woollen Processing: Contribution to Elimination of Variables. W. E. Prentice. *Papers of the Second Canadian Textile Seminar*, 1950, Sept., 48-51. Methods for maintaining established standards in a Canadian mill are described. These appertain to all stages of manufacture, and systematic checks of various processes are made and recorded. W—5A.

Wool Tops: Fibre Diameter Measurement; Report of the 1948 Inter-Laboratory Diameter and Length Experiment. ("International Wool Textile Organisation Technical Committee.") R. C. Palmer. *J. Textile Institute*, 1951, 42, P23-43. The experiment was designed to test the reproducibility between laboratories of three methods of measuring the mean fibre diameter of wool tops. The three methods were:—(1) measurement by the projection microscope of the profiles of small cut pieces—the Dischka projection microscope method, (2) measurement by a gravimetric single fibre method—the Wool Industries Research Association method, and (3) measurement by the Maillard and Roehrich gravimetric method using the fibre sorter. Fifteen laboratories in different countries participated in the diameter and length experiments, and each laboratory measured each sample provided by each of the following five methods:—(1) projector, diameter, (2) Wool Industries Research Association, diameter and length, (3) modified Wool Industries Research Association gravimetric, diameter and length, (4) Maillard and Roehrich, diameter and length, and (5) Trois Pinces, length. These methods are described in detail, and the results are tabulated. The accuracy of each method, differences between participating laboratories, and reproducibility of results are discussed. Reasons are suggested for the inter-laboratory difference. W—5A.

Wool Fibres: Measurement of Damage to. M. Robinet. *J. Textile Institute*, 1951, 42, P20-22. A comparison of the efficiency of the Pauly reagent, lactophenol cotton blue, and Rhodamine B for assessing damage, revealed the superiority of lactophenol cotton blue. The fibres to be examined are cut into short lengths (less than 1 mm.), treated for a specified time with one of the reagents, and washed. The numbers of unaffected, slightly coloured, and strongly coloured fibres are then counted under the microscope. Results are given for untreated wool and wool treated for 30 minutes in 0·1 per cent. sodium carbonate solution at 40°, 60°, and 70° C. W—5A.

(B)—YARNS

Moisture-content Determination by Electrical Measurement. Part I. ("Feuchtegehaltsbestimmung durch elektrische Messung." I.) H. Mahlo. *Text.-Praxis*, 1950, 5, No. 1, 73-76. The principle, construction and application are described of an apparatus by means of which the moisture content of textile materials, in either package or open-width form, can be determined. The device is based on the variation of electrical resistance with moisture-content, and various forms of electrode suitable for different applications are shown. Graphs are given which show the relationship between moisture content and resistance of various materials. C—5B.

Moisture-content Determination in Yarns. ("Der Turboprüfapparat von Diez zur Ermittlung der Faserfeuchtigkeit.") R. Popp. *Text.-Praxis*, 1950, 5, No. 1, 28-29. A description is given of the principles and construction of a simple device for determining the moisture-content of yarns. It consists essentially of a container in which is a small gauze basket for holding a sample of the yarn being tested. Air is drawn through the sample and passed on to a special hair-hygrometer which gives a value for the moisture-content when equilibrium is reached. The principle is based on the fact that for a given atmospheric humidity, the fibre will either take up from or yield to the atmosphere a certain quantity of moisture proportional to the deficiency or excess relative to the air. C—5B.

Terylene: Properties. Anon. *Text. Whly*, 1950, 46, No. 1184, 1390, 1392. Some technical information on "Terylene" is presented, including types of yarn, chemical properties, and resistance to heat, light, abrasion, micro-organisms, insects and flame. C—5B.

Testing of Textiles: Standardised Methods. J. Lomax. *Text. Rec.*, 1950, 68, October, 83-84. Some standardised procedures for the routine testing of textile materials (drawn up by the Textile Institute and the British Standards Institution) are discussed. These include the measurement of twist, moisture content, strength and count. A "skein girth gauge" is mentioned. C—5B.

Yarn Testing Machine: Balance-type Dynamometer. ("Le Dynamomètre à balancier.") R. Gillet. *Industrie text.*, 1950, 67, 288-290. A description is given of the principles and construction of a yarn tester which is based on the traverse of a constant weight along a balance arm. C—5B.

Rayon Yarn: Regularity Measurement: Viviani Apparatus. V. E. Gonsalves. *Rayon Revue* (English Issue), 1950, No. 3, 30-31. This is an English translation of a Dutch article on the Viviani apparatus for the determination of rayon yarn irregularity. (For the original reference and abstract see *J. Textile Institute*, 1949, 40, A466.) C—5B.

"Terylene": Dielectric Properties. W. Reddish. *Chem. & Ind.*, 1950, No. 50, 808. A brief report is given of a lecture and discussion on the dielectric properties of "Terylene". C—5B.

Testing Laboratory for Cotton Mill. W. A. Thomason. *Text. World*, 1950, 100, October, 89-91. A brief illustrated account is given of a cotton testing laboratory attached to an American spinning mill. The tests employed are listed. C—5B.

Uster Evenness Tester: Usefulness in Quality Control. W. A. Thomason. *Text. World*, 1950, 100, October, 94-95, 210, 212; Anon. *Text. Industr.*, 1950, 114, November, 90-93. A report of a discussion on quality-control in textile manufacture is given, in which examples of the use and value of the Uster yarn regularity tester are described. C—5B.

Uster Tension Meter. ("Un tensiomètre efficient.") L. Hermanne. *Rayonne*, 1950, 6, No. 4, 55-58. A description of the use, and principles of operation of the "Uster" tension meter is given. Two types are available, one measuring average tension and the other the maximum tension. Typical data obtained by these instruments are presented for the winding of various yarns. C—5B.

Vinyon HH Staple Yarn. H. E. Shearer. *Text. World*, 1950, 100, October, 100-102, 224, 226, 228. Some information is presented on "Vinyon HH" staple fibre, a copolymer of vinyl chloride and vinyl acetate. This covers uses, constitution and manufacture, behaviour (resistance to chemicals, the effects of moisture, fire and heat, electrical conductivity, and shrinkage), deniers and staple lengths, bonding with other fibres, spinning, and dyeing. C—5B.

Yarn Irregularity: Method of Defining. ("Über die Ermittlung der Ungleichmässigkeit von Garnen.") H. Conrad. *Melliand Textilber.*, 1950, 31, No. 3, 163-165. It is held that obvious errors are inherent in the customary method of expressing the irregularity of a yarn as the percentage deviation of the arithmetic mean of three values lying below the principal arithmetic mean of all the values obtained in testing the irregularity of a given yarn. The proposed method defines the irregularity by the inclination to the horizontal of the curve obtained by plotting all the values determined in a series of breaking-stress tests. C—5B.

Yarn Strength Testing: Avoiding Clamp Breaks. J. W. Ij. Heijnis. *Rayon Revue* (English Issue), 1950, No. 3, 64-69. This is an English translation of an

article in Dutch which discusses yarn breakage at the grips during yarn strength testing, and describes an improved type of grip designed to avoid this breakage. (For the original reference and abstract, see *J. Textile Institute*, 1950, 41, A134.) C—5B.

Compound Twist Yarns: Analysis. ("Some Useful, Calculations.") *Wool Rec.*, 1951, 79, 455, 457-8. The examples analysed are (i) an all-worsted gimp yarn used for decorative stripes, and (ii) a fine snarl yarn used in hosiery manufacture. W—5B.

Yarn Irregularity: Measurement. M. W. Townsend. *J. Textile Institute*, 1951, 42, 12-19. A description of experiments designed to compare, on a range of yarns, the measurements made by several irregularity testers with measurements of the variation of weight per unit length of the yarns. Six laboratories participated, and the following instruments were used:—(1) plaque fendue, (2) Vitno tester, (3) Micrometre Solex, (4) Dr. Calzone's tester, (5) Shoe tester, and (6) capacity measuring instrument. Results are tabulated for the variation of weight per unit length within 10 metres yarn and for the instrument measures or irregularity within 10 metres yarn; the consistency of each instrument is indicated, and estimates made of the property that each instrument measures. W—5B.

(C)—FABRICS

Flammability Measurements on Thin Sheet Materials and Fabrics. J. R. Blegen. *Gen. Electr. Rev.*, 1950, 53, No. 10, 9-12. After a brief review of early attempts to perfect a flammability test for thin materials, a satisfactory testing instrument that has been developed is described. This instrument, in which a regulated flame is applied to the specimen held at an angle of 45°, is entirely automatic in operation, and both time of ignition, and rate of burning are obtained directly without any judgment on the part of the operator. C—5C.

Heat-resistant Laminated Plastics: Strength Tests. B. M. Axilrod and Martha A. Sherman. *J. Res. Nat. Bur. Stand.*, 1950, 45, 65-84. The flexural properties of samples of glass-fabric laminates have been determined for several conditions of heating and testing. The laminates tested were bonded with various resins, including unsaturated-polyester, acrylic, silicone, phenolic and melamine types. Temperatures up to 300° C. were employed. Tables are presented giving values of flexural strength and modulus of elasticity determined under the various conditions. Loss in modulus of elasticity is correlated with loss in flexural strength in all cases. C—5C.

Moisture Content Determination in Fabrics. ("La misura dell'umidita dei tessuti.") Anon. *Riv. Tessile*, 1950, 5, No. 6, 621, 623. The writer claims that the paper constitutes an objective discussion on the merits and demerits of various procedures for determining moisture in fabrics. The methods examined include the measurement of electrostatic charge on the material, the determination of electrical resistance or conductivity, and the determination of the dielectric factor. C—5C.

Moisture Content of a Fabric in a Drying Machine. ("La misura delle umidità dei tessili nelle macchine di essiccazione.") Anon. *Riv. Tessile*, 1949, 4, No. 11, 1163-1164. Methods of determining the moisture content of materials when passing through a drying machine are described and their accuracy and suitability discussed. The methods include the cutting out of a test-piece, measurement of electrical resistance, the dielectric constant, and temperature difference at two points within the machine. A further method is discussed at greater length and consists of determining the electrostatic charge on the surface of the material, the charge being proportional to the degree of drying. It is stated that in addition to being accurate and convenient, it is the only method whereby the moisture content at different points on the width of the cloth can be determined. The device can be incorporated in an automatic cloth-speed regulating device. C—5C.

Non-rigid Plastics: Stiffness Measurement: Autographic Method. R. D. De Waard. *Modern Plastics*, 1949, 27, No. 1, 115-118, 164, 166, 168. An automatic recording apparatus for the measurement of the stiffness of elastomers is described. A constant rate of straining is applied to one end of the cantilever specimen strip by means of a motor-driven loading screw. Electrical resistance-wire strain gauges attached to suitable weighting beams are used to measure and record the force exerted on the specimen. An autographic recorder produces a load-deflec-

tion curve, and from the slope of the initial portion the stiffness is computed. The theory and experimental procedure of the method are explained and some results on two plastics are given. C—5C.

Nylon Hosiery: Snag Resistance: Testing. American Society for Testing Materials, Committee D-13. *A.S.T.M. Standards on Textile Materials*, 1950, 124-129. A tentative method for testing the snag resistance of nylon hosiery, including a description of the apparatus used, is presented. The nylon stocking, held under tension, is pulled over a protruding section of sandpaper under standardized conditions. The number of snags resulting from this treatment is counted both before and after a hand wash. C—5C.

Thermal Insulating Materials: Specific Heat Measurement: Proposed Standard Method. N. H. Spear. *Bull. A.S.T.M.*, 1950, No. 168, 79-83. An apparatus and test method for the determination of specific heats of thermal insulating materials are described. The method is under consideration for standardisation by the American Society for Testing Materials, and test data from various laboratories (on the same material) are presented and compared with the "true value" as determined by the National Bureau of Standards (U.S.A.). C—5C.

Abrasion Resistance of Rayon Fabrics: Reproducible Testing Technique. Margaret H. Zook. *Amer. Dyest. Rep.*, 1950, 39, No. 21, 679-685. A method for the statistical control of the "Taber Abraser" has been set up so that reproducible results may be obtained with the machine. The testing procedure is described and results are presented for twelve rayon fabrics. A preliminary study was made of the reproducibility of the results. Consideration has been given to the variables affecting reproducibility of results, and an improved three-wheel test method has been suggested and used. C—5C.

Accelerated Washfastness Test. American Association of Textile Chemists and Colorists. *Amer. Dyest. Rep.*, 1950, 39, No. 20, P657-658. A method for testing the fastness of the colours and the abrasion resistance of cotton fabrics during washing has been developed. A 45-minute test by this method is roughly equivalent to five average commercial or home launderings. A "Launder-Ometer" is employed in which stainless steel tubes replace the glass jars usually used. C—5C.

Accelerated Weathering Tests: New Apparatus. J. B. Marr and Co. Ltd. *Engineering*, 1951, 171, No. 4433, 57. A few details (with illustration) are given of a new electrically controlled accelerated weathering testing machine. C—5C.

Ageing of Fabrics: Effects of Weathering and Subsequent Storage. J. Maas. *Amer. Dyest. Rep.*, 1950, 39, No. 21, P693-698, P714. Cotton sheeting was subjected to three forms of weather exposure: (1) All influences, including solar radiation and rain. (2) All influences, but with exclusion of sunshine and rain by a cover. (3) All influences, but with exclusion of sunshine by a slot device. After exposure for one-, two-, and three-month periods of time, the fabric was placed in storage at constant temperature and relative humidity. Measurements were made of cuprammonium fluidity, breaking strength, and sulphuric acid equivalent upon withdrawal of samples from exposure, and after storage. The results are presented and discussed. C—5C.

Cotton Duck: Weathering of Bleached and Unbleached Samples. J. D. Dean, W. N. Berard, and R. K. Worner. *Text. Res. J.*, 1950, 20, No. 9, 643-649. Outdoor weathering tests (in a moist warm climate) have been carried out on six bleached and six unbleached samples of cotton duck fabric. The results of fluidity breaking strength, copper number, and *pH* measurements are presented and discussed. C—5C.

Cotton Knitted Goods: Effect of Abrasion on Dyeing Characteristics. K. A. Jenkins and H. F. Keels. *Amer. Dyest. Rep.*, 1950, 39, No. 20, P660-661. An investigation has been made of the effect of abrasion on the dyeing properties of knitted cotton goods. The abraded area has more affinity for some dyes than has the unabraded area, and the chemical condition of the goods before and during abrasion influences the effect of abrasion on modification of dye affinity. The effect of abrasion on dye affinity can be minimised by selection of dyes. C—5C.

Fabric Wrinkling: New Measuring Instrument. H. H. Hebeler and H. J. Kolb. *Text. Res. J.*, 1950, 20, No. 9, 650-653. A new instrument, known as the

"Wrinklometer", for the measurement of wrinkle-resistance and wrinkle-recovery of fabrics is described. Some tests that indicate the performance of the instrument are briefly reported. C—5C.

Glass-Cloth Laminates: Use of Epoxy Resins. I. Silver and H. B. Atkinson. *Modern Plastics*, 1950, **28**, No. 3, 113-122 (6 pages). The physical properties of glass-cloth laminates incorporating epoxy resins of various formulations have been measured. Details of the resin formulations used are given, and also of the methods of application of the resins to the glass-cloth. Physical properties of the laminates which are presented, include tensile and flexural strengths, dielectric constants, dissipation factors, moisture absorption properties, and hardness data. C—5C.

Narrow Fabrics: Effects of Structure and Properties of Yarns. W. E. Morton. *J. Textile Institute*, 1950, **41**, No. 9, P692-700. The structure of yarns is discussed in relation to certain physical properties of rigid webs, tapes, and ribbons. The properties considered are strength, extensibility, curl, and lateral rigidity. Possible fields for investigation are indicated. C—5C.

Rayon Fabrics: Calculation of Strength. R. Bouvet. *Text. World*, 1950, **100**, October, 131, 133, 208, 210. Some factors to be taken into consideration in calculating the strength of a rayon fabric from yarn properties are discussed. They include type of yarn used, amount of twist, inherent stretchability of individual yarns, and relative humidity. A formula is given for the calculation. C—5C.

No Textile Labelling. *Text. J. Austral*, 1950, **25**, 1000. The Associated Chambers of Manufactures of Australia in Canberra has advised that the Commonwealth proclamation bringing the regulations into force this month (Dec. 1950) may be repealed, and that the State Governments have been so notified, and no doubt will withhold any gazetting of State regulations. The A.C.M.A. Director is under the impression that the Commonwealth Government has found it necessary to reconsider the position on account of legal difficulties which would require amendments to be made to the present provisions and proposals. It does not appear likely that textile labelling will be introduced for some time, if ever. W—5C.

Weft Bars in Fabrics. ("Possible Causes and Remedies.") *Wool Rec.*, 1950, **78**, 2068, 2070. The causes discussed include quality variation, twist differences, and over-conditioning. W—5C.

(D)—Other Materials

Synthetic Plastics in the Textile Industry. ("Vollsynthetische Kunststoffe in der Textilindustrie.") L. Kollek. *Melliand Textilber.*, 1950, **31**, No. 1, 26-31. The impact of the development of plastics on the textile industry during the past few years is discussed. Not only have new fibres been developed but the hitherto more conventional materials have been modified by the application of these new substances in preparation (for example, sizing) and finishing processes. A schematic classification of synthetic plastics, which also identifies them under some of their trade names, is presented. The properties of various synthetic fibres are briefly discussed, some of the more important ones being compared in tabular form. The application of plastic materials to textile machinery is also indicted. C—5D.

Textile Testing: Apparatus and Methods. ("Anleitung zur Durchführung und Auswertung von Textilprüfungen sowie zur Darstellung ihrer Ergebnisse.") M. Matthes. *Melliand Textilber*, 1950, **31**, No. 2, 133-136; No. 3, 201-204. A detailed account is given of the apparatus, laboratory fittings, and chemical reagents required in a textile testing establishment. Short descriptions of test, evaluation, and presentation methods are accompanied by indications of sources of personal injury and first-aid procedures. C—5D.

Patent

High-frequency Oscillator Sliver, Roving and Yarn Regularity Tester. Zellweger A.G. Apparate- und Maschinen-fabriken Uster. B.P.638,365: Appl. and filing 25/4/1947; Publ. 7/6/1950; Swiss appl. 29/4/1946. An instrument for measuring cross-sectional variations in slivers, rovings and yarns comprises a series of measuring condensers, to accommodate different thicknesses of material, each embodying two inter-digitating comb-like electrodes between which an electric field is established and through which the material is passed. C.

7—LAUNDERING AND DRY-CLEANING

Detergent Solutions: Suspending Power, Part II, Soap-Builder Solution. A. S. Weatherburn, G. R. F. Rose, and C. H. Bayley. *Canad. J. Res.*, 1950, **28, F**, 363-375. Laboratory scale measurements have been made of the ability of certain alkaline salts, commonly used as laundry soap builders, to hold carbon particles in suspension, and thus prevent their deposition on fabric during the washing process. In general, the addition of builders to soap solutions resulted in a decrease in the suspending power of the soap. Builders fall into three groups (simple electrolytes, silicates, and phosphates) and the effect of *pH* on the suspending power of soaps "built" with compounds of each of these types has been observed. A tentative explanation of the influence of builders on suspending power of soaps is given, and builders are classified according to their suspending power. (Part I, see *J. Textile Institute*, 1951, **42**, A29.) **C—7.**

The Washing Process as a Change of Surface Wetting Agents. ("Der Waschvorgang als Umnetzung.") W. Kling. *Koll. Zschr.*, 1949, **115**, Nos. 1-3, 37-44. The washing process depends on several different factors, for example, particle charge, dispersion, solubilisation, and surface wetting. The present paper considers only one aspect, namely, surface wetting, and suggests that removal of foreign matter, such as oil by a cleansing agent, might be regarded as an exchange of wetting agents. After presenting theoretical grounds for this suggestion, the results of qualitative tests are given in support of the view, the tests being considered as satisfactory evidence. The lack of a practical means of determining the wetting tension of total-wetting agents, to which the cleansing agents belong, prevents the subject being treated in a quantitative manner. **C—7.**

PATENTS

Detergent for Hard Water. Procter and Gamble Co. (assignee of W. C. Preston). B.P.638,637: Appl. and filing 17/6/1947; Publ. 14/6/1950; U.S.A. appl. 22/7/1946 and 24/2/1947. A detergent composition for use in hard water comprises (1) a soap that would form a curd in hard water, (2) an organic sulphuric acid product (sulphonic acid or sulphuric ester) that does not form a curd, and (3) a higher amide (especially of one of the "soap" acids) that assists (2) in preventing (1) from developing curd. Typical formulations are disclosed in eleven examples. **C.**

Fabric Steaming and Cleaning Apparatus. W. M. Cissell. B.P.638,641: Appl. and filing 23/7/1947; Publ. 14/6/1950; U.S.A. appl. 28/6/1940. Apparatus for steaming and cleaning fabrics (silks, velvets, woollens) includes a mixing chamber fitted with valve-controlled steam and water passages, and an operating member common to both valves by means of which steam or steam + water may be admitted but which secures that the steam valve must be open before the water valve is opened. **C.**

8—BUILDING AND ENGINEERING

(A)—CONSTRUCTION AND MAINTENANCE OF BUILDINGS AND PLANT

Trends in Textile Technology. W. H. Slater. *Text. Whly*, 1950, **46**, No. 1184, 1402, 1404, 1406, 1407. Concluding a review[1] of developments in textile machines and methods the author covers developments by the Universal Winding Co., developments in condenser spinning, automatic weaving, knitting, finishing, and power and power transmission. ([1]See *J. Textile Institute*, 1951, **42**, A135.) **C—8A.**

Nylon Parts for Textile Machinery. Anon. *Text. World*, 1950, **100**, October, 103-107. Illustrations and brief descriptions are given of some textile machinery parts made partly or wholly from nylon plastic. Some information is given on the machinery of nylon. **C—8A.**

Offset Drilling Device. E. Bridges. *Text. Industr.*, 1950, **114**, October, 136. The construction of an offset drilling device for attachment to an ordinary electric drill is described. The tool enables holes to be drilled in otherwise inaccessible places. **C—8A.**

(C)—STEAM RAISING AND POWER SUPPLY

Power Transformers: Protection Measures. Anon. *Text Mfr*, 1950, **76**, October, 473-475. Various risks which can arise in the working of large power transformers and safety measures to be taken are considered. **C—8C.**

(D)—Power Transmission

Electric Motors: Stocking Spare Parts. W. G. Hall. *Text. Industr.*, 1950, 114, October, 117-120. Advice is given on the stocking of replacement parts for electric motors, including what to stock and how to store it. C—8D.

(G)—Heating, Ventilation and Humidification

Air-conditioning in Textile Establishments. ("Ueber Probleme bei der Klimatisierung von Arbeitsräumen in der Textilindustrie.") O. Oldenhage. *Text.-Praxis*, 1950, 5, No. 1, 16-19. Factors involved in obtaining the correct temperature and moisture conditions in different types of work-room are considered. Accurate and continued determination of the condition of the atmosphere is recommended in order to check the efficiency of any humidification installation which depends not only on controlling the temperature and moisture of incoming air but also on the heat generated within the room by the machines and personnel and on the heat lost or gained due to the effect of external conditions. The economics and lay-out of air-conditioning plants are also surveyed. C—8G.

Air-conditioning in Textile Mills. ("Bauweise und Klimaanlagen in Textilbetrieben.") J. Rössler. *Text.-Praxis*, 1950, 5, No. 1, 29-31. Efficient air-conditioning depends not only on the quantity of air dealt with by the plant, but also on the maintenance of the correct conditions both on work-days and holidays, freedom from dust and fluff, and efficient distribution throughout any given space. Adaptation of plant to old structures, the design of new structures, design of plant and the choice of general or unit air-conditioning systems are discussed. C—8G.

Air-conditioning in the Textile Industry. ("Il condizionamento d'aria nell' industria tessile.") P. Studer. *Riv. Tessile*, 1950, 5, No. 2, 153-156; No. 3, 261-266. This survey of air-conditioning plant includes notes on its development, importance in textile manufacture, maintenance of comfortable working conditions, principles of installation (including schematic diagram), control of humidity, and automatic control. C—8G.

Air-conditioning Plant: Calculation of Dimensions. ("Berechnungsgrundlagen für den Entwurf von Klimaanlagen.") W. Oeser. *Text.-Praxis*, 1950, 5, No. 1, 22-26. The installation of an automatically controlled air-conditioning system in a ring-spinning room is taken as an example to illustrate a method for calculating the dimensional requirements of such an installation by taking into consideration such factors as size of room, number of persons employed, number and type of machines, and the structure of the building. C—8G.

Space-heating in Textile Mills. ("Die Heizung im Textilbetrieb.") J. Rössler. *Text.-Praxis*, 1950, 5, No. 1, 49-51. Space heating in textile mills is surveyed with respect to the type of building to be heated, and the nature of the heat source. Several systems of heating are compared in tabular form where their advantages and disadvantages are summarised. C—8G.

Air-conditioned Mill. Anon. *Text. World*, 1950, 100, October, 116-117. A specially designed air-conditioning system (with humidity and temperature control) for a weaving mill is briefly described. Some illustrations are given. C—8G.

Air Conditioning in the House of Commons. Anon. *Engineering*, 1950, 170, No. 4426, 393-397. In an account of the engineering features of the new House of Commons, a description is given of the air conditioning system installed there. C—8G.

Heating in Weaving Sheds. ("Heizung und Befeuchtung in Webereien.") P. Amme. *Textil-Praxis*, 1950, 5, No. 2, 110-113. Methods of space-heating are described, particular attention being paid to unit-heaters equipped with fans. These units are operated from a central switchboard which controls various groups in different sections of a shed; one group of units, however, is distributed evenly over the whole shed. The steam supply to the units is similarly arranged. The system is very useful where steam-generating capacity is limited, since the air can be rapidly heated to the required temperature prior to normal starting of machinery and other steam-consuming operations. "Refreshers" can be given by means of any group where and when required. The method can easily be

incorporated into a comprehensive air-conditioning system. The applications of high or low pressure steam to space heating are discussed, the former being less practical. Several methods of using waste-steam from high-pressure systems are described. C—8G.

Relative Humidity. M. Hugenholtz. *Rayon Revue* (English Issue), 1950, No. 3, 70-76. This is an English translation of an article in Dutch in which the principles of humidification are discussed. (For the original reference and abstract see *J. Textile Institute*, 1949, 40, A473.) C—8G.

(H)—WATER PURIFICATION

Hardness of Water: Determination: Investigation of New Methods. I. A. Heald, K. B. Coates, and J. E. Edwards. *Industr. Chem.*, 1950, 26, October, 428-434. An account is given of an investigation of recently published methods on the use of disodium dihydrogen ethylene diamine tetra-acetate (EDTA) for determining the hardness of water. Modifications recommended by the authors are described. C—8H.

Water. H. Schmassmann and W. Schmassmann. *Ciba Rev.*, 1950, No. 82, 2970-2994. A series of five illustrated articles dealing with (*a*) sources and circulation of water, (*b*) nature of water from the point of view of the impurities it contains, (*c*) water for trade and industrial use, (*d*) the purification of waste waters, and (*e*) water supply, past and present. C—8H.

Cotton Finishing Plants: Treatment of Waste Waters. G. G. Bogren. *Amer. Dyest. Rep.*, 1950, 39, No. 20, 669-671. After a brief consideration of the composition of waste waters from various finishing processes, some chemical and biological methods of purification are outlined. C—8H.

Synthetic Resin Ion-exchangers. ("Die Anwendung von Kunstharz-Ionenaustauschern.") W. Wesly. *Melliand Textilber.*, 1950, 31, No. 1, 62-65; No. 2, 127-130. The chief properties of synthetic resin ion-exchangers, known as "Wofatit", are described. Their applications include water-softening for power plants and the textile industry. The equations of several of the reactions involved in the filtering processes are given. C—8H.

9—SCIENCE

Cotton Plant: Response to Leaf-curl Disease. J. B. Hutchinson, R. L. Knight, and E. O. Pearson. *J. Genet.*, 1950, 50, No. 1, 100-111 (through *Rev. Appl. Mycol.*, 1950, 29, 507). The results of a survey in the Sudan of the response of 671 strains of cotton to cotton leaf-curl virus, are reported. Evidence is presented to show how the disease reached the Sudan from West Africa. Three virus diseases of cotton observed in West Africa—bunchy top, mosaic, and leaf-curl—are described with an indication of their distribution. C—9.

Polyvinyl Chloride Films: Effect of Fungus Growth on Tensile Strength. S. Berk. *Bull. A.S.T.M.*, 1950, No. 168, 53-55. Polyvinyl chloride films plasticised with three plasticisers have been inoculated with a species of the fungus *Trichoderma*. A measure of the susceptibility of the three differently plasticised films to attack by fungi was obtained by determining the changes in the tensile strength and percentage elongation of the specimens after attack. Results are reported. C—9.

Collagen and Elastin: Determination in Tissues. R. E. Neuman and M. A. Logan. *J. Biol. Chem.*, 1950, 186, No. 2, 549-556. A colorimetric method of determining the collagen content of tissues is described. Means are provided for estimating the effectiveness of separation of collagen from tissue by autoclaving. A method of estimating the elastin content of tissue is also described. The measured collagen content and the estimated elastin content of various tissues are reported. C—9.

Polysaccharide Synthesised from Sucrose by *Niesseria Perflava*: Structure. S. A. Barker, E. J. Bourne, and M. Stacey. *J. Chem. Soc.*, 1950, October, 2884-2887. The polysaccharide synthesised from sucrose by cultures of *Niesseria perflava* has properties intermediate between those of amylopectin and glycogen, approximating more closely to those of the latter. Its average chain length is 11-12 glucose units. C—9.

Protein Hydrolysis in Presence of Carbohydrates. E. Kofranyi. *Naturwissenschaften*, 1950, **37**, 91 (through *Amer. Chem. Abstr.*, 1950, **44**, 8390e). A method for preparing protein hydrolysates in the presence of large amounts of carbohydrates is described. Excessive humin formation is avoided. C—9.

Proteases in Virus-Diseased Tissues: Polyhedral-Diseased Silkworms. F. Yoshihara. *J. Agr. Chem. Soc. Japan*, 1950, **23**, 252-257 (through *Amer. Chem. Abstr.*, 1950, **44**, 8390e). The proteolytic actions of proteins obtained from diseased silkworms have been tested with 3 per cent. albumin solution as substrate. The effects of temperature and *pH* are reported. The relation between experimental virus formation and proteolytic activity of the silkworm body has also been investigated. C—9.

Serum Proteins: Fractionation With a Quaternary Ammonium Detergent. F. J. Loomeijer. *Nature*, 1950, **166**, No. 4231, 951-952. The fractionation of serum proteins with the aid of quaternary ammonium compounds (which has hitherto presented difficulties) has now been successfully carried out using "Desogen" (methylphenyl dodecyltrimethyl-ammonium-methosulphate). Separation into at least four components can be achieved using the method described. C—9.

Serum Proteins: Micro-Kjeldahl Determination. B. Levin, V. G. Oberholzer, and T. P. Whitehead. *Analyst*, 1950, **75**, October, 561-563. The relationship between time of digestion, amount of sodium sulphate and of selenium as catalyst in the micro-Kjeldahl determination of serum proteins has been investigated. The optimum conditions have been determined. C—9.

Starch Synthesised by *Polytomella Cœca*. E. J. Bourne, M. Stacey, and I. A. Wilkinson. *J. Chem. Soc.*, 1950, October, 2694-2698. Investigations on the composition of the starch synthesised by *Polytomella cœca* from ethyl alcohol or acetic acid, are reported. This starch contains 13-16 per cent. of amylose and 83-87 per cent. of amylopectin. C—9.

Carbon and Hydrogen: Micro- and Semimicro-determination. W. Kirsten. *Mikrochem. mikrochim. Acta*, 1950, **35**, Nos. 2/3, 217-235. Various microdetermination methods for carbon and hydrogen have been examined with a view to devising a really satisfactory procedure which does not require complex apparatus. Such an apparatus is described. C—9.

Chlorites: Analytical Characteristics. ("Contribution à l'étude des caractères analytiques des chlorites.") Josette Morandat and C. Duval. *Mikrochem. mikrochim. Act*, 1950, **35**, Nos. 2/3, 194-204. Investigations of the analytical characteristics of the chlorites have been based on the similarity of their chemical behaviour to that of the nitrites. Three types of reaction for the detection of the ClO_2^- ion have been examined: coupling with certain amines or phenols to give coloured products, generation of a green colouration in copper acetate solution, and the formation of characteristic crystals of a triple chlorite of copper, lead and potassium. C—9.

Copper Number: Importance in Rayon Technology. ("L'indice de cuivre et son importance dans le cas de la rayonne.") E. Ronsin. *RUSTA*, 1949, **24**, No. 1, 19-22. After a brief review of the development of methods for determining the copper number of cellulose, that is, the weight in grams of copper reduced from the cupric to the cuprous state by 100 g. cellulose, the Braidy procedure is discussed in detail. Its application to the study of cellulose at all stages of regenerated cellulose manufacture is described. It is recommended as a procedure on account of simplicity, accuracy and sensitivity. C—9.

Microanalytical Reactions: Sensitivity. ("Über die Empfindlichkeit mikroanalytischer Reaktionen.") H. Malissa. *Mikrochem. mikrochim. Acta*, 1950, **35**, Nos. 2/3, 266-301. A simplified method of indicating the sensitivity of microanalytical reactions, which employs only a positive number, is recommended. For the first time, the sensitivities of reactions for detecting cations and anions, as recommended in the report by P. E. Wenger and R. Duckert (published by the Union Internationale de chimie), are brought together in the form of two tables which also include substances and ions which interfere with the reactions. C—9.

Pentoses: Colorimetric Determination. M. V. Tracey. *Biochem. J.*, 1950, **47**, No. 4, 433-436. A method using an aqueous solution of aniline, acetic acid and oxalic acid for the colorimetric estimation of pentoses in the presence of large

amounts of hexoses and uronic acids, is described. The effect of varying conditions on the specificity and sensitivity of the reaction has been determined and optimal conditions are described. C—9.

Reducing Sugars in Starch Hydrolysates: Estimation by Paper Chromatography. P. Shu. *Canad. J. Res.*, 1950, **28, B,** No. 9, 527-534. A method for the quantitative determination of glucose, maltose, and reducing dextrins in starch hydrolysates is described. The components are separated by paper chromatography and determined colorimetrically by measurements of their reducing power with alkaline copper and arseno-molybdate reagents. A compact apparatus suitable for handling a large number of samples in the chromatographic separation, is described. C—9.

Soluble Starches: Chromatographic Fractionation. M. Ulmann. *Koll. Zschr.*, 1950, **116**, No. 1, 10-18. The author demonstrates that starches can be fractionated by selective adsorption from solution on a column of alumina and records observations on a number of commercial starches and food products. The fractions can be rendered visible by staining with iodine, dark blue, light blue and pale violet zones being obtained. If the alumina is first treated with dilute hydrochloric acid the component giving the light blue zone is not adsorbed and the other zones are darker and more distinct. C—9.

Carboxymethylcellulose: Determination of Degree of Substitution. ("Contribution à l'étude de l'analyse et du degré de substitution des carboxyméthylcelluloses.") A. Pacault and M. Bouttemy. *Bull. Soc. chim. Fr.*, 1950, Nos. 7-8, 663-668. A systematic study of the combustion of carboxymethylcellulose has led to a method for the determination of its degree of substitution. This calcination method has been compared with an acidimetric method, the former being found to be both easier and more dependable. It is, moreover, similar to a method developed for the examination of commercial carboxycelluloses which enables an accurate determination of the principal impurities to be made. (Translation of authors' summary.) C—9.

Cellulose Degradation: Investigation of Hydro- and Oxy-cellulose Formation by Muller Reaction. ("De la nature chimique des rayonnes dégradées par hydrolyse ou par oxydation.") M. C. Pinte and M. P. Rochas. *Bull. Inst. text. France*, 1950, October, 9-57. Extensive use has been made of the Muller reaction in the determination of the end-products of cellulose degradation brought about by hydrolytic or oxidation reactions. The Muller reaction consists essentially in causing the aldehyde groups of the degraded cellulose to react with phenylhydrazine *p*-sulphonate so as to form the phenyl hydrazone which on treating with a diazonium salt in alkaline solution gives rise to a coloration ranging from wine-red to dark-brown. A colorimeter was employed. It was found possible effectively to distinguish between the aldehyde groups of hydro- and oxycellulose, and to draw conclusions as to the nature and reactivity of these groups. The reaction was used to investigate the formation and properties of hydrocelluloses and oxycelluloses, and the results of the work are given in some detail and with considerable graphical data. C—9.

Cellulose: Solution in Organic Solvents. K. H. Meyer, M. Studer, and A. J. A. van der Wyk. *Monatsh.*, 1950, **81**, 151-154 (through *Amer. Chem. Abstr.*, 1950, **44**, 8639[g]). The solubility of amorphous cellulose (prepared by precipitating a solution of cuprammonium cellulose in acetic acid) in various organic solvents has been studied. Cellulose from sulphite pulp and cotton wool was used. Solvents used included mixtures of pyridine and chloral, pyridine and resorcinol, and pyridine and hydroquinone. Certain salts whose aqueous solutions have solvent action on cellulose (for example, lithium halides and calcium thiocyanate), have been found to have a better solvent action when dissolved in pyridine or quinoline. C—9.

Cereal and Potato Starches: Constitution and Properties. ("Sur la constitution et les propriétés des amidons de blé et de pomme de terre.") M. R. Sutra. *Bull. Soc. chim. Fr.*, 1950, Nos. 3-4, 294-297. Differences in the constitution and properties of cereal and potato starches are indicated by the mode of attachment of phosphoric acid in the natural starches, their different behaviour in aqueous solution, and their different rates of polymerisation. C—9.

D-Glucosazone: Periodate Oxidation. C. F. Huebner and K. P. Link. *J. Amer. Chem. Soc.*, 1950, **72**, October, 4812-4813. Some information obtained from a

study of the oxidation of D-glucosazone by sodium periodate is reported. The reaction of one mole of glucosazone with three moles of the periodate produced two moles of formic acid, one of formaldehyde, and one of the 1:2-bis-phenylhydrazone of mesoxaldehyde. A transformation of the 1:2:3-tris-phenylhydrazone of mesoxaldehyde (by recrystallisation from acetic acid or ethanol containing mineral acid) to a compound differing from its present by the elements of phenylhydrazine, is also reported. Experimental details are given. C—9.

Ethoxylated Lignin Sulphonic Acids: Sulphonation. ("Studies on the Sulphonation of Lignin, Part II.") H. Erdtman and T. Pettersson. *Acta chem. scand.*, 1950, 4, No. 7, 971-977. Low-sulphonated, ethoxylated lignin sulphonic acids have been obtained from sulphonated wood containing free sulphonic acid groups by refluxing with ethanol. These acids have been subjected to resulphonation with sulphite cooking acid of varying acidity. The effect of the degree of acidity on the elimination of ethoxyl groups has been observed. Experimental details and results are presented. C—9.

Iodine Adsorption by Cellulose and by Viscose Rayon obtained from it. ("Étude comparative de l'adsorption sur la cellulose et sur la soie-viscose à partir de cette viscose.") E. Angelescu and D. Damain, *RUSTA*, 1949, 24, No. 2, 3, 5, 7, 9. Comparison is made between the adsorption of iodine by cellulose and viscose rayon prepared from it. In both cases it was very weak as compared with that of starch but the viscose was the more powerful adsorbent of the two, giving a greenish-blue coloration whereas the cellulose became brown. The effect of prior treatment with concentrated sulphuric acid was also examined. C—9.

Monocarboxycellulose. Z. A. Rogovin, L. Kondrashchuck, and R. Malakhov. *Zhur. Priklad. Khim.*, 1950, 23, 418-427 (through *Amer. Chem. Abstr.*, 1950, 44, 8636[i]). Some properties of cellulose modified by the action of nitrogen dioxide (so-called monocarboxycellulose) have been investigated. Viscosity measurements in cuprammonium solutions give low values, but these are probably due to cleavage of glucoside links in the alkaline (cuprammonium) solution. When cellulosic fabrics are treated with nitrogen dioxide, crease resistance is the only mechanical property which is significantly affected (declines to 1 per cent. of original value). Resistance to alkalis, acids, and water at elevated temperatures is markedly decreased. Products made by further oxidation (with chlorites) have also been studied. C—9.

Nitrates of Dewaxed Cotton Linters: Nitrogen Content and Viscosities: Effect of Wetting and Drying. A. Rosenthal and R. K. Brown. *Pulp Paper Mag. Can.*, 1950, 51, No. 6, 99-105 (through *Amer. Chem. Abstr.*, 1950, 44, 8639[d]). Dewaxed cotton linters were air-dried and then subjected to alternate wetting and drying cycles. Samples were analysed for nitrogen content and intrinsic viscosity of the nitrates, and for accessibility to thallous ethylate methylation. All drying cycles resulted in increases in accessibility and in increases in nitrogen content and decreases in the viscosity of the nitrates. C—9.

Polymerisable Starch Derivatives: Acylallyl Starches. ("Sur les dérivés polymérisables de l'amidon: les acylallylamidons.") J. Chadapaux, G. Champetier, and E. Savostianoff. *Bull. Soc. chim. Fr.*, 1950, Nos. 5-6, 594-596. Experimental details are given of the preparation of acetylallyl starch and lauroylallyl starch by means of the action of the corresponding acid chlorides on an organic solution of anhydrous allyl starch. C—9.

Proteins: Action of Nitrogen Trichloride: Part I, Isolation and Identification of Toxic Factor. H. R. Bentley, E. E. McDermott, T. Moran, J. Pace, and J. K. Whitehead. *Proc. Roy. Soc.* **B**, 137, No. 888, 402-417. Zein, gluten, and egg albumen have been treated with nitrogen trichloride, making them toxic to certain animals. The treated proteins were digested by enzymatic means and partial acid hydrolysis. Methods are described by which the hydrolysates have been fractionated and the toxic component isolated as a pure crystalline substance. The toxic factor isolated from zein, gluten, and egg albumen is found to be the same chemical substance in each case. Data are given which establish that it is a derivative of methionine. C—9.

Tapioca Starch: Production. ("Ethyl Alcohol from Cassava.") C. Teixeira, A. A. Andreasen, and P. Kolachov. *Ind. Engng Chem.*, 1950, 42, 1781-1783. This paper contains a brief account of the source and production of cassava or tapioca starch. C—9.

Wheat Starch Manufacture: Separation of Starch from Pentosans. K. A. Clendenning and D. E. Wright. *Canad. J. Res.*, 1950, **28, F**, 390-400. The starch sludge or "squeegee" fraction obtained with all known methods of starch manufacture, has been studied and a new interpretation of the phenomenon is presented. Analysis has shown that pentosans are the chief impurity present. Protein is another important impurity, and attempts have been made to reduce the quantities of pentosans and protein in the crude wheat starch. A practical method of lowering the quantity of these impurities to the level required for the production of first quality syrup is described. **C—9.**

Cataphoresis of Spherical Particles in Strong Fields. F. Booth. *J. Chem. Phys.*, 1950, **18**, No. 10, 1361-1364. A mathematical treatment is presented which completely solves the problem of determining the rate of cataphoresis of a solid spherical particle in an electrolyte when relaxation effects are neglected. The bearing of the results on the usual methods of finding zeta-potentials from cataphoretic velocities is discussed. **C—9.**

Ethyl Cellulose Containing Bound Metal: Effect on Dilute Solution Properties. E. F. Evans and H. M. Spurlin. *J. Amer. Chem. Soc.*, 1950, **72**, October, 4750-4756. Viscometric and osmotic measurements have been carried out on dilute solutions (in various solvents) of ethyl celluloses containing bound metals, such as sodium, calcium, barium, and magnesium. The results show that neutralisation of the carboxyl groups with metallic ions causes an increase in viscosity, this increase being greatest in the case of non-polar solvents, and least in solvents containing appreciable water or alcohol. The osmotic pressure measurements were not "too satisfactory", but in general there appeared to be no effect on the slope of the reduced osmotic pressure-concentration curve. **C—9.**

Gelatine: Structure. ("Contribution à l'étude de la structure des gélatines. II. Variation des propriétés physiques et mécaniques avec la masse moléculaire.") J. Pouradier and (Miss) A.-M. Venet. *J. Chim. Phys.*, 1950, **47**, 391-398. Several factors affect physical and mechanical properties of a gelatine, one of the most important of these being molecular weight. To avoid complications arising from factors such as origin and polymolecularity, all determinations have been carried out on homogeneous gelatines obtained by fractionation. An expression has been found which relates intrinsic viscosity to molecular weight. The melting point of gelatine increases with molecular weight and approaches a limiting value. It has been found possible to determine the law governing the variation with molecular weight of the precipitation index in alcohol. An attempt has been made to describe the shape of gelatine molecules in solution from considerations of certain thermodynamic coefficients obtained. **C—9.**

Hardening of Sericin: Influence on Adsorption Desorption Hysteresis. K. S. Rao, M. B. Rao, A. R. Vasudevamurthy, and B. S. Rao. *Proc. Natl. Inst. Sci. India*, 1950, **16**, 1-4 (through *Amer. Chem. Abstr.*, 1950, **44**, 8195[d]). Adsorption and desorption curves have been obtained at 30° C. for water vapour on hardened and unhardened sericin. A persistent hysteresis effect was obtained with hardened sericin, but the hysteresis effect shown by the unhardened sericin decreased and finally disappeared as the cycles were repeated. **C—9.**

High-molecular Solutions: Free Energy and Entropy of Dilution. ("Die Zahl der Komplexionen einer Gesamtheit aus Molekülen verschiedenen Grösse und die Freie Energie und Entropie der Verdünnung hochmolekularer Lösungen.") A. R. Miller. *Koll. Zschr.*, 1949, **114**, No. 3, 149-161. The deviation of the behaviour of high molecular solutions from the simple laws governing ideal solutions may be explained by considering the former to be "co-operative assemblies" whose properties are considerably influenced by the reciprocal effects between the component systems. From X-ray investigations it is shown that the geometrical relationship between molecules in a liquid may be expressed by an average co-ordination number which, however, is not valid for a molecule and its more distant neighbours. Thus a quasi crystalline state may be said to exist. Extending the theme to high-molecular solutions, expressions are derived by means of which it is sought to show that the average co-ordination number adequately describes the reciprocal effects between neighbouring molecules. This concept of small geometrical units within a solution is then developed in discussions on the free energy and entropy of dilute solutions of high polymers. **C—9.**

High Polymer Solutions: Viscometric Properties. G. M. Guzman. *Revista de ciencia aplicada (Madrid)*, 1950, 4, No. 1, 29-43 (through *Kodak Mthly Abstr. Bull.*, 1950, **36**, No. 9, 449). A review is given of the theory and methods of measurement of the viscosity of solutions of high polymers. (In Spanish.) C—9.

Iodine-Azide Reaction: Part V, Catalytic Effect of Trithionate Ions. N. Holfman-Bang. *Acta chem. scand.*, 1950, 4, No. 7, 1005-1013. The kinetics of the reaction between sodium azide and iodine, catalysed by trithionate ions, have been investigated. The mechanism of the reaction was different from that of the tetra-[1] and pentathionate catalysed reactions. ([1]*J. Textile Institute*, 1950, 41, A531; for Part IV, see *J. Textile Institute*, 1951, **42**, A127.) C—9.

Ion Exchange: Theory of Sorption Columns. (1) L. G. Sillén, (2) E. Ekedahl, E. Högfeldt, and L. G. Sillén. *Nature*, 1950, **166**, 722-724. (1) The theoretical treatment of equilibrium and non-equilibrium processes in sorption columns is considered. Two types of non-equilibrium fronts are dealt with briefly—the "final form front" and the "broadening front". (2) Previous work on the adsorption of silver ions (by exchange with hydrogen ions) in an exchange column has indicated that the ion exchange reaction is bimolecular, and a simple formula is given to represent the kinetics of this reaction. When an ion exchanger saturated with silver ions is percolated with a solution of hydrogen ions, no equilibrium constants k and k_1 can be found to fit the given bimolecular formula and the "mass-action law constant" $K(=k/k_1)$ is not constant. A new approach to the problem has been made based on the approximate assumption that in elution experiments equilibrium had at all points been attained between sorbent and solution. C—9.

Macromolecular Solutions: Elasticity. ("Élasticité des solutions macromoléculaires. I. Bases théoriques.") Y. Conseiller and J. Duclaux. *J. Chim. phys.*, 1950, 47, 411-414. This is a theoretical introduction to an experimental study. A mechanical model of a deformable and viscous system conforming to the rules of Maxwell, is described and discussed. Although imperfect, the model serves to define the chief points to be studied. C—9.

Nitrocellulose: Fractionation by Adsorption. M. C. Brooks and R. M. Badger. *J. Amer. Chem. Soc.*, 1950, 72, October, 4384-4388. The adsorption of nitrocellulose on starch from solutions of acetone admixed with several co-solvents has been studied. The rate of adsorption is high and the adsorption is reversible. A chromatographic experiment is reported which demonstrates that the dependence of the extent of adsorption on molecular weight makes possible the fractionation of nitrocellulose according to molecular weight. C—9.

Pectin: Molecular Weight. S. A. Glikman and S. I. Orlov. *Doklady Akad. Nauk S.S.S.R.*, 1950, 71, 895-897 (through *Amer. Chem. Abstr.*, 1950, 44, 8199[i]). The molecular weights of fractions of pectin have been determined by means of osmotic pressure measurements. The results are about 40 per cent. below those obtained viscometrically.[1] Molecular weight is an insufficient criterion for determination of colloidal properties of pectin. ([1]*J. Textile Institute*, 1946, 37, A539.) C—9.

Permeability of Membranes to Dyes: Kinetics of Dialysis. T. Nishi. *J. Soc. Chem. Ind., Japan*, 1941, 44, 233-238 (tthrough *Amer. Chem. Abstr.*, 1950, 44, 8198[d]). The kinetics of the dialysis of several dyes at 50°, 60°, and 70° C. have been determined. The dialysis constant varies inversely with the molecular weight, but the relation is not exact, and can be used only as a measure of relative particle size. C—9.

Thermal Conduction of Macromolecular Substances. C. Matano. *J. Soc. Chem. Ind., Japan*, 1943, 46, 30-34 (through *Amer. Chem. Abstr.*, 1950, 44, 8201[e]). A method and apparatus are described for the measurement of the thermal conductivity of macromolecular substances in the form of fibres or films. Conductivity data are presented for a number of woven and knitted fabrics. C—9.

Viscosity of Liquids at High Rates of Shear. A. F. H. Ward, S. M. Neale, and N. F. Bilton. *Nature*, 1950, **166**, No. 4230, 905. Viscosity measurements have been made on a mineral oil at high rates of shear, and the results have been applied to test the theory of Grunberg and Nissan.[1] (This theory predicts that at high rates of shear, the viscosity of "Newtonian" liquids should become a function of the rate of shear.) The observed results are in reasonable agreement with the theory. ([1]*J. Textile Institute*, 1945, 36, A484.) C—9.

Viscosity-Temperature Relationship. A. V. Brancker. *Nature*, 1950, **166**, No. 4230, 905-906. A simple equation of the form $\eta = a\eta/_T + b$ has been proposed to represent the relation between viscosity η and temperature T (a and b are constants). Values of η and $\eta/_T$ have been plotted for various liquids in temperature ranges between $-110°$ and 1400° C., and the linear relationship has been confirmed. C—9.

Colorimetric Integration: Application of Harmonic Analysis. E. Hellmig. *Z. wiss. Phot.*, 1949, **44**, No. 1-7, 58-76 (through *Kodak Mthly Abstr. Bull.*, 1950, July, 335). A method of evaluating four or more integrals of products all with the same multiplier function is presented for colorimetric integration. By representing the common multiplier function (*i.e.* the visual colour mixing curves) as a Fourier series, and by applying harmonic analysis to each of the variable functions (*i.e.* spectrophotometric curves), each desired integral can be obtained as a sum of a few simple products. C—9.

Denatured Ovalbumin: Birefringence Measurements. J. F. Foster and E. G. Samsa. *Science*, 1950, **112**, No. 2912, 473-474. Samples of ovalbumin have been denatured in various ways and birefringence measurements have been made on solutions of the denatured protein. From the results, particle lengths have been calculated. It is concluded that aggregation plays an important part in the over-all denaturation process. C—9.

Energy Basis of Optical Resolution. V. Ronchi. *Atti della Fondazione Giorgio Ronchi*, 1949, **4**, 177-194 (through *Kodak Mthly Abstr. Bull.*, 1950, **36**, No. 9, 436). It is asserted that the term "resolving power" of an optical instrument has no meaning. The conditions affecting resolving power when the eye is the receiving mechanism, are compared with those for the case of the photographic plate. Experimental evidence leads the author to claim that the chief determinant of resolution is not the shape of the pattern, but the amount of energy within it. The application of the theory to television is sketched. C—9.

Automatic Stabilisation of X-Ray Tube Current. C. S. Lees and M. D. Armitage. *J. Sci. Instrum.*, 1950, **27**, 300-301. A circuit for the automatic control of electron emission in X-ray tubes is described. C—9.

"Conifuge" Sampling Device for Airborne Particles. K. F. Sawyer and W. H. Walton. *J. Sci. Instrum.*, 1950, **27**, 272-276. An apparatus for sampling airborne particles is described, consisting basically of a conical self-pumping centrifuge in which the indrawn cloud is "winnowed" by an internally circulating stream of clean air in such a way that the particles are classified according to their settling velocities and deposited on a glass slide in a continuously graded sample. Experimental data and photomicrographs of some deposits are given. C—9.

Cover-slip Carrying Case. D. G. Drummond. *J. Sci. Instrum.*, 1950, **27**, 313. A description is given of the construction of a cover-slip carrying case that is particularly useful for the transport of cover slips used in collecting dust samples. C—9.

Creep and Dynamic Rheological Properties of Dielectric Polymers: Measurement. W. Lethersich. *J. Sci. Instrum.*, 1950, **27**, 303-306. An apparatus is described for applying a shear stress rapidly to solid materials and for measuring the strain a few milliseconds afterwards. The apparatus can also be used for measuring the dynamic modulus and internal friction coefficient. C—9.

Electronic Conductivity in Non-metals. G. Busch. *Z. angew. Math. u. Physik*, 1950, **1**, 3-31; 81-110 (through *Kodak Mthly Abstr. Bull.*, 1950, July, 337). A systematic review is given of the international literature on the subject of electronic conductivity in non-metals. C—9.

Electron Microscope: Magnetostatic Objective-Projective System. ("Ein magnetostatisches Objektiv-Projektiv-System für das Elektronmikroskop.") B. v. Borries. *Koll. Zschr.*, 1949, **114**, No. 3, 164-167. A permanent magnet lens system for an electron-microscope is described. C—9.

Electron Microscope Images: Motion Pictures. L. E. Preuss and J. H. L. Watson. *J. appl. Phys.*, 1950, **21**, 902-903. A technique for taking motion pictures of electron microscope images is described. Pictures are taken from outside the instrument, utilizing the radiation emitted by the fluorescent screen. C—9.

Systematic Sampling: Theory, Part II. W. G. Madow. *Ann. Math. Stat.*, 1949, **20**, No. 3, 333-354. The results of an earlier paper are extended to the systematic sampling of clusters of equal and unequal sizes, and some comments on systematic sampling in two dimensions are included. In addition, two theorems of general importance in the theory of sampling are derived, and consideration is given to the efficiency of designs with negative correlation between strata. C—9.

Mould-growth: Its Origin and Prevention. ("Ursache und Bekämpfung von Schimmelbefall auf Textilien.") M. Nopitsch. *Melliand Textilber.*, 1950, **31**. No. 3, 182-188. The conditions which encourage the growth of mould on textiles are given, together with a description of the development and propagation of some of the more prominent varieties of mildew. Methods are discussed for combating these growths, both during processing, that is, during intermediate storage, and whilst the finished material is being employed in its intended application, for example, as fire-hose, fish-netting, tarpaulin, clothing (including tropical wear), and conveyor belting. Procedures are presented for examining the fungicidal efficiency of various preparations. C—9.

Amino Acids: Tautomerism between Ring and Chain Forms. M. Tomita and Y. Seiki. *J. Biochem.* (Japan), 1950, **37**, 81-90 (through *Amer. Chem. Abstr.*, 1950, **44**, No. 19, 8740[d]). By use of Debye's and Laue's röntgenometric methods, both isomers of glycine were measured at three main axes. The isoelectric points of the ring and chain forms were determined from titration curves. The tautomeric conversion in the asymmetric synthesis of glycine from phthalimide malonic ester, and the biological role of the ring form on the protein molecule, are discussed. C—9.

Hydroxylysine: Isolation from Gelatin Hydrolysate. J. G. Heathcote. *Biochem. J.*, 1950, **47**, No. 3, xxxiii. The isolation of pure hydroxylysine from a gelatin hydrolysate by displacement chromatography is described. C—9.

Insulin: Enzymic Inactivation: Mechanism. D. Kertesz. *Compt. rend. soc. biol.*, 1949, **143**, 1469-1471 (through *Amer. Chem. Abstr.*, 1950, **44**, No. 19, 8971[b]). The mechanism of the oxidation of insulin by the combined action of polyphenoloxidase and *o*-quinone is discussed. C—9.

Automatic Continuous Laboratory Still. H. C. Highet. *Chem. & Ind.*, 1950, No. 49, 783-787. The construction, testing, and operation of an automatic continuous laboratory still are described. C—9.

Determination of Water by Oven Drying: Rate of Evaporation. T. J. Mitchell. *Chem. & Ind.*, 1950, No. 47, 751-753. Factors which affect rate of evaporation in the oven-drying of samples for the determination of water, have been investigated. These include type of oven (steam or vacuum), type and size of dish, and presence of other dishes in the oven. Results are presented and briefly discussed. C—9.

Fluorescent Indicators for Acid-Base Titrations: Parts I & II. K. Neelakantam and G. Viswanath. *Curr. Sci.*, 1950, **19**, 15-16, 27 (through *Brit. Chem. Abstr.*, **C**, 1950, Part 10, 427). (1) Sixteen synthetic coumarins have been tested for fluorescence changes with *pH* (in the range 3-10) under filtered ultra-violet light. Coumarins without a free hydroxyl group do not show prominent changes. (2) Coumarin compounds not showing marked fluorescence changes in the *pH* range 3-10 have been tested in the more acid and alkaline *pH* ranges. C—9.

Friedrich Microkjeldahl Determination of Nitrogen. Geraldine E. Secor, Marion C. Long, Mary D. Kilpatrick, and L. M. White. *J. Assoc. Off. Agric. Chem.*, 1950, **33**, No. 3, 872-880. The Friedrich microkjeldahl method for the determination of nitrogen present in the compound in oxidized form (for example, as nitro- and nitroso-groups) has been investigated. The method involves pre-treatment of the sample with hydriodic acid followed by digestion with a sulphuric acid-potassium sulphate mixture. The results presented and discussed in this paper deal primarily with the effect of the sulphuric acid/potassium sulphate ratio on the recovery of nitrogen. C—9.

Fucose: Estimation in Seaweeds. W. A. P. Black, W. J. Cornhill, E. T. Dewar, E. G. V. Percival, and A. G. Ross. *J. Soc. Chem. Ind.*, 1950, **69**, No. 10, 317-320. An improved method for the estimation of combined fucose in ground seaweed

samples is described. The oxidation of the fucose liberated on hydrolysis is conducted with periodate at a controlled *pH*, and the acetaldehyde liberated is estimated colorimetrically. C—9.

"Honeydew": Detection on Raw Cotton. M. F. Stansbury and C. L. Hoffpauir. *Bureau of Agricultural and Industrial Chemistry (U.S.A.) Pamphlet* AIC-262, 1950, February, 4 pp. A qualitative test for "honeydew" on raw cotton is described in detail. Some notes are also given on the nature of "honeydew" and on the application of the test. (See also *J. Textile Institute*, 1950, 41, A402. C—9.

Ion Exchange Resins in Chromatography. C. W. Davies. *Research*, 1950, 3, No. 10, 447-452. This is a review dealing with the properties of ion exchange resins, chromatographic procedures, separation of isotopes, separation of weak electrolytes, and separation of strong electrolytes. C—9.

Lignin: Methods of Determination. B. Thomas and D. G. Armstrong. *J. Agric. Sci.*, 1949, 39, Part 4, 335-346. Three methods for the determination of lignin, all based on isolation with 72 per cent. sulphuric acid, have been investigated and their relative effectiveness compared. Evidence of the necessity for applying a nitrogen correction to the lignine as found is given. C—9.

Mercurous Salts: Volumetric Determination. F. Burriel-Marti and F. Lucena-Conde. *Analyt. Chim. Acta*, 1950, 4, No. 4, 344-350. A method for the titration of mercurous salts, similar to the Volhard one for silver, is proposed. A solution of potassium mercurothiocyanate is used to precipitate the mercurous ions and ferric sulphate solution is used as indicator. C—9.

Methylglyoxal and Acetol Mixtures: Quantitative Analysis. C. Neuberg. *Rec. Trav. Chim. Pays-Bas*, 1950, 69, 520-525 (through *Brit. Chem. Abstr.*, **C**, 1950, Part 10, 402). Two procedures are described for the quantitative analysis of mixtures of methylglyoxal and acetol. C—9.

Organic Analysis: Application of Ceric Salts. C. C. Guardia. *Afinidad*, 1950, 27, 289-294 (through *Brit. Chem. Abstr.*, **C**, 1950, Part 10, 426). A review is given of the use of ceric sulphate as a reagent for determining organic acids, and glucose, sucrose, maltose, and glycerol in mixtures containing dextrose, as in fermentation liquors. C—9.

Saponification Value: Determination. E. Hezel. *Farbe u. Lack*, 1950, 56, 10-11 (through *Brit. Chem. Abstr.*, **C**, 1950, Part 10, 408). A method for the determination of saponification value, employing two indicators, is described. C—9.

Separatory Funnel for Ether Extractions. J. H. Cannon. *J. Assoc. Off. Agric. Chem.*, 1950, 33, No. 3, 934. A new separating funnel consisting of a U-tube, both limbs of which are closed by stopcocks, is described, and its use in ether extractions explained. C—9.

Alkali Cellulose: Reaction with Carbon Disulphide. Part I. O. Samuelson. *Svensk kem. Tidskr.*, 1946, 58, 285-293 (through *Brit. Chem. Abstr.*, **BII**, 1950, June, 468). Alkali cellulose and xanthated alkali cellulose have been treated with carbon dioxide and the remaining caustic soda determined. Alkali cellulose reacts quickly with carbon dioxide, but the reaction with carbon bisulphide is slower. The reaction between alkali cellulose and carbon dioxide is slowed down by xanthation. The formation of a shell of xanthate gel during xanthation which impedes the xanthation has also been investigated. C—9.

Barley Amylase and Proteinase: Extraction for Estimation. E. Sandegren and N. Klang. *J. Inst. Brew.*, 1950, 56, No. 5, 313-318. Methods for extracting free and total barley amylase are described. Barley meal is extracted with 0·1 M sodium chloride solution for free amylase determination and by sodium chloride in the presence of cystein for total amylase. The inactive enzyme is activated by reducing substances. A modification of the Anson hæmoglobin method for determination of proteinase activity has been applied to barley. C—9.

Carbohydrate Chemistry: Modern Developments. E. L. Hirst. *Adv. Sci.*, 1950, 7, No. 26, 131-142. The address by the President of the Chemistry Section at the 1950 Annual Meeting of the British Association for the Advancement of Science, is given in full. C—9.

Colours and Chemical Structures. T. Hannotte. *Chim. peint.*, 1949, **12**, No. 11, 404-410 (through *Brit. Chem. Abstr.*, **B** II, 1950, June, 462). The theories which have been advanced to explain colour in organic compounds are discussed in relation to typical dye structures. **C—9.**

Cottonseed Meats: Fractionation. C. G. Reuther. Reprint from *Cotton Gin and Oil Mill Press*, 1950, Jan. 21, 2 pp. The progress on the fractionation of cottonseed is reviewed from the original experiments to the present. A process for the fractionation of cottonseed meats has been further developed to obtain increased yields of fine meal free from pigment glands. **C—9.**

(1) Decomposition of Diazo Compounds in Acid and Alkaline Solution. (2) Alkaline Reduction of Aromatic Nitro Compounds. H. H. Hodgson, W. H. H. Norris, and E. R. Ward. *J. Soc. Dyers Col.*, 1950, **66**, No. 9, 471-474. (1) Some interpretations of the mechanism of the decomposition of diazo compounds are briefly reviewed. The authors' fundamental assumption is that diazonium ions and not co-valent diazo compounds decompose when nitrogen is liberated, and on this basis the effect of kationoid and anionoid substituents on the stability of diazo compounds in acid, neutral and alkaline solutions is explained. Alkaline diazotes and diazo resins (formed by many diazotised amines in alkaline solutions) are mentioned. (2) The alkaline reduction of aromatic nitro compounds is complicated by the aldol condensation of the nitroso and hydroxylamino reduction products. The influence of kationoid and anionoid substituents on this reduction is considered. The anomalous case of the reduction of *p*-dinitrobenzene by sodium hydrosulphide is discussed. **C—9.**

Starch: Action of Polyoxyethylene Monostearate. D. D. Lord. *J. Colloid Sci.*, 1950, **5**, No. 4, 360-375. The action of polyoxyethylene monostearate as a "softener" for bread has been investigated. Most of the experiments described in this paper are concerned with the effect of the ester upon the starch constituent of the bread. The ester produces a depression of swelling and swelling power of starch gels. **C—9.**

Starch and Metal-salt Compounds. ("Stärke und Mettalsalze.") R. Haller. *Melliand Textilber.*, 1950, **31**, No. 1, 49-50. An attempt is made to characterise more exactly the adsorption compounds of starch and metal salts which had previously been regarded as chemical compounds. The adsorbed metal oxides change the behaviour of the starch to a considerable extent, more especially in respect of enzymatic influences. (From Author's summary.) **C—9.**

Water- and Alkali-Soluble Cotton Yarns: Preparation. J. D. Reid, G. C. Daul, and R. M. Reinhardt. *Text. Res. J.*, 1950, **20**, No. 9, 657-659. The differences between the alkali-soluble metal carboxymethyl cellulose fibres and the water-soluble modified carboxymethylated cotton yarns are indicated. The laboratory preparation of the latter is described. **C—9.**

Aerosols: Adsorption by Various Fibres. Y. Matsunaga. *Bull. Nagoya Inst. Technol.*, 1949, **1**, 260-270 (through *Amer. Chem. Abstr.*, 1950, **44**, No. 19, 8734[h]). The adsorption on single fibres of silk, glass, and bamboo was measured for aerosols of benzidine, ammonium chloride, liquid paraffin, Boyle's oil, stearic acid, D-mannitol, and lanoline. **C—9.**

Chemically Modified Cotton Fabrics: Ion-Exchange Characteristics. C. L. Hoffpauir and J. D. Guthrie. *Text. Res. J.*, 1950, **20**, No. 9, 617-620. Several chemically modified cotton fabrics have been prepared and their characteristics as anion- and cation-exchangers have been evaluated. The modifications included phosphorylated, sulphethoxylated, carboxymethylated, and aminoethyl celluloses. The ion-exchange properties of each modification are briefly discussed. **C—9.**

Cottonseed Globulin Solutions: Intrinsic Viscosity. J. C. Arthur and Barbara H. Saik. *J. Colloid Sci.*, 1950, **5**, No. 4, 326-330. The intrinsic viscosity of cottonseed globulin in urea solutions has been determined. From this value a shape factor of the globulin molecules (the axial ratio) has been obtained and is compared with that for other vegetable protein molecules. Shape characteristics are important in adapting the globulin for use in making synthetic fibres. **C—9.**

Emulsions: Formation and Flow. E. G. Richardson. *J. Colloid Sci.*, 1950, **5**, No. 4, 404-413. Two processes for the production of emulsions are discussed (1) an injection process; one liquid is squirted into another, (2) a turbulent flow

process; two liquids are allowed to mingle in turbulent motion. Flow phenomena of emulsions are briefly dealt with, the effect on viscosity of (*a*) concentration of dispersed phase, (*b*) drop-size distribution, and (*c*) rate of shear, being considered. C—9.

Metal Hydroxides: Solubility in Sodium Hydroxide and in Ammonia. M. I. Arkhipov, A. B. Pakshver, and N. I. Podbornova. *Zhur. Prikład. Khim.*, 1950, 23, 650-656 (through *Amer. Chem. Abstr.*, 1950, 44, No. 19, 8740[h]). The solubilities of the hydroxides of copper, zinc, nickel, and cobalt in sodium hydroxide and in ammonia at 20° C. have been determined. The solubility of cellulose in such solutions is discussed. C—9.

Molecular Weight Determination by Viscometric Methods. ("Über den heutigen Stand viskometrischer Molekulargewichtsbestimmungen.") G. V. Schulz. *Koll. Zschr.*, 1949, 115, Nos. 1-3, 90-103. In discussing developments in the determination of molecular weight by viscometric methods, it is shown that the viscosity number,

$$Z_\eta = \left[\frac{\eta_{sp}}{C}\right]_{C=0}$$

leads to a suitable material constant by means of which any deviation of viscometric properties of the solution of the substance can be neglected. The derived constant is identical with "intrinsic viscosity", and is dependent on the extent of non-homogeneity of the substance and on the solvent. Experimental results from investigations on the relationship between viscosity number and molecular weight have been collated, and it has been found that one group of substances (the polysaccharides) behaves according to the Staudinger equation, other substances (vinyl polymers and the polyamides) follow the Kuhn formula, whilst a third group (the polystyrenes) has a complicated behaviour. [48 references.] C—9.

Polystyrene: Osmotic Molecular Weight and Intrinsic Viscosity. H. P. Frank and J. W. Breitenbach. *Monatsh.*, 1950, 81, 570-582 (through *Amer. Chem. Abstr.*, 1950, 44, No. 19, 8739[e]). Styrene samples thermally polymerized at various temperatures were fractionated by adding alcohol to methyl ethyl ketone solutions. Osmotic pressure measurements gave unreliable molecular weights with methyl ethyl ketone as solvent, but better results were obtained with mixtures of methyl ethyl ketone and acetone. Intrinsic viscosities measured in toluene solution followed a given relation. C—9.

Polystyrene Solutions: Freezing Point. J. W. Breitenbach and A. J. Renner. *Monatsh.*, 1950, 81, 454-455 (through *Amer. Chem. Abstr.*, 1950, 44, No. 19, 8739[g]). The osmotic pressure calculated from cryoscopic data for benzene solutions of polystyrene is considerably greater than that actually determined. The solid phase (frozen) contains almost exactly the same concentrations of benzene and polystyrene as the liquid phase. C—9.

Polystyrene Solutions: Osmotic Pressure Measurements. ("High Polymer Solutions, Part II.") C. E. H. Bawn, R. F. J. Freeman, and A. R. Kamaliddin. *Trans. Faraday Soc.*, 1950, 46, 862-872. Osmotic pressure measurements have been made at 25° C., on ten molecular weight fractions of polystyrene in toluene and on four fractions in methyl ethyl ketone. The experimental procedure is described, and the results are presented and discussed in relation to current theories of high polymer solutions. An equation is given which accurately represents the results obtained for toluene and a graphical method for evaluating its constants is given. C—9.

Proteins: Electrophoresis in Agar Jelly. A. H. Gordon, B. Keil, K. Šebesta, O. Knessl, and F. Šorm. *Collection Czechoslov. Chem. Communs.*, 1950, 15, 1-16 (through *Amer. Chem. Abstr.*, 1950, 44, No. 19, 8992[b]). An apparatus and methods for the electrophoretic separation of proteins in agar jelly are described in detail. C—9.

Solubilisation. H. B. Klevens. *Chem. Rev.*, 1950, 47, No. 1, 1-74. A comprehensive review of the phenomenon of solubilisation ("the spontaneous passage of solute molecules of a substance insoluble in water into an aqueous solution of a soap or detergent in which a thermodynamically stable solution is formed") is presented. This covers (1) methods of observation, (2) types and mechanisms of solubilisation, (3) change in continuous medium, (4) effect of

structure of solubiliser, (5) effect of structure of solubilisate, (6) temperature effects, (7) effect of various additives, (8) structure and organization in soap solutions, (9) applications of solubilisation. There are 258 references to the literature. C—9.

Structure of Rayon: Rate of Dyestuff Absorption. ("Beitrag zur Kenntnis des Feinbaues von Zellwolle und Kunstseide—Die Geschwindigkeit der Farbstoffaufnahme in Abhängigkeit von der Faserdichte.") E. Elöd and H. G. Fröhlich. *Melliand Textilber.*, 1950, **31**, No. 3, 179-182. Results are presented of experiments which were carried out to determine the influence of micellar packing-density variation across a transverse section of different regenerated cellulose fibres on the rate or amount of dyestuff taken up within the fibre. Whilst it is sought to establish the existence of the so-called "sheath" or layer structure, no attempt is made to produce data on the density, swelling and other properties of these layers; the examination is restricted to the behaviour of these layers with respect to different dyestuffs. C—9.

The Ultracentrifuge. H. Gutfreund. *Research*, 1950, **3**, No. 10, 442-447. A brief review is made of the theory, construction, and operation of the ultracentrifuge, including optical methods of observation of boundaries and the calculation of sedimentation constant. C—9.

Unfractionated Polystyrene: Relation between Intrinsic Viscosity and Molecular Weight. J. W. Breitenbach, A. J. Renner, H. P. Frank, and E. Kindl. *Monatsh.*, 1950, **81**, 455-457 (through *Amer. Chem. Abstr.*, 1950, **44**, No. 19, 8739[h]). The conditions of polymerisation (catalyst, ratio of catalyst to styrene, temperature, time, and percentage conversion) and the osmotic pressure and intrinsic viscosity, as well as molecular weights calculated therefrom, are given for twelve polystyrene samples. An equation relating molecular weight and intrinsic viscosity is derived from the data. C—9.

Viscosities in Dilute Solutions: Dependence on Concentration. R. Simha. *J. Colloid Sci.*, 1950, **5**, No. 4, 386-392. A theoretical treatment of the concentration dependence of viscosities in dilute solutions is presented. At very low concentrations, at which solute molecules either retain their identity and original shape or form low-order aggregates, the concentration dependence of the reduced specific viscosity η_{sp}/c results from two factors: hydrodynamic interaction, and aggregation. An expression for the latter and a simplified description of the former are given. C—9.

Proteins: Absorption of Light, Parts I and II. E. Schaunenstein. *Monatsh.*, 1949, **80**, 820-842; 843-855 (through *Amer. Chem. Abstr.*, 1950, **44**, No. 19, 8978[i]). A review and interpretation of recent work on the absorption of light by proteins is presented. Part I deals with the change in the absorption spectra with *pH* of several proteins (including silk), and the effects of mechanical stress on absorption. In Part II ultra-violet absorption by the linear chromophore C=N found in proteins is discussed. Polarisation effects with silk fibroin are considered. C—9.

Polystyrene Solutions: Extinction Angles, Intrinsic Viscosities, and Molecular Weights. M. D. Schoenberg, J. Riseman, and F. R. Eirich. *J. Colloid Sci.*, 1950, **5**, No. 4, 393-403. Extinction angle, intrinsic viscosity, and sedimentation measurements have been made on polystyrene fractions. Data so obtained have been used to examine the Kuhn theory of streaming birefringence and also to calculate rotatory diffusion constants. Molecular weights have been calculated from a combination of intrinsic viscosity and rotatory diffusion constant, and the values obtained compared with those from osmotic pressure, sedimentation and intrinsic viscosity measurements. C—9.

Suspensions of Solids in Water: Influence of Particle Size on Passage of Light. A. H. M. Andreasen, K. Krebs, N. Aa. Dalsgaard-Pedersen, E. Camradt-Petersen, and B. Kjær. *J. Soc. Chem. Ind.*, 1950, **69**, No. 10, 312-317. The effect of particle size on the transmission and scattering of light passing through a suspension of solid materials in water, has been investigated. Two terms are introduced: the specific extinction coefficient, and the specific nephelo-value of a suspension. The variation of these quantities with the grain size of white as well as some coloured suspensions has been studied. C—9.

Thin Films: Determination of Thickness and Refractive Index. P. D. Fochs. *J. Opt. Soc. Amer.*, 1950, **40**, September, 623. A method of determining con-

currently the thickness and refractive index of a thin film or lamina is briefly described with a discussion of the theory. C—9.

Absorption Factors of Single Crystals: Estimation. R. G. Howells. *Acta Crystall.*, 1950, **3**, September, 366-369. An accurate method for estimating the X-ray absorption factors for oscillation photographs of single crystals of constant cross-section is given. It is applicable to zero and non-zero layer lines, and is extended to zero-layer-line reflexions in two special cases of crystals of varying cross-section. C—9.

α-D-Glucose: Crystal Structure. T. R. R. McDonald and C. A. Beevers. *Acta Crystall.*, 1950, **3**, September, 394-395. Some results from preliminary work on the crystal structure of α-D-glucose are given. They confirm previous findings relating to the *trans* configuration of the pyranose ring. C—9.

Cellulose Fibre Structure: X-Ray Analysis. ("Röntgenstrukturuntersuchungen an Zellulosefasern.") W. Kast. *Melliand Textilber.*, 1950, **31**, No. 2, 83-88. A detailed account is given of X-ray investigations into the crystalline structure of cellulose fibres. In spite of attempts to discover a relationship between the nature and orientation of the crystalline micelles, our knowledge in this field is far from complete though several interesting observations have been made. Various conjectures as to micellar structure and the arrangement of the cellulose molecule are discussed and illustrated photographically and diagrammatically. The fibres dealt with include native, mercerised, and regenerated fibres at various stages of treatment. C—9.

Combined Bending and Torsion Testing of Concrete Specimens. D. Fisher and N. S. J. Grassam. *Engineering*, 1951, **171**, No. 4432, 21. An apparatus is described by means of which bending and torsional forces can be simultaneously applied to a concrete pillar and their effects measured. C—9.

Combined Tension and Torsion Testing Machine. H. V. Pollard and H. J. Tapsell. *Engineering*, 1951, **171**, No. 4433, 58. A brief illustrated description is given of a machine by means of which combined tension and torsion measurements can be made. The apparatus has been developed to study the plastic flow of materials at high temperature. C—9.

Cotton Powder for Infra-red Transmission Measurements. Florence H. Forziati, W. K. Stone, J. W. Rowen, and W. D. Appel. *J. Res. Nat. Bur. Stand.*, 1950, **45**, No. 2, 109-113. The grinding of cotton to a fine powder in a vibratory ball mill has been studied in order to obtain cotton in a suitable form for infra-red transmission measurements. Particle size, cuprammonium fluidity, carboxyl content, moisture regain, and X-ray diffraction measurements have been carried out on cotton milled for various periods of time. Infra-red absorption measurements were also made using a paste of the powdered cotton in a mineral oil. C—9.

Cotton: Swelling in Water: Microscopical Study. Anna T. Moore, Lorraine W. Scott, Ines V. de Gruy, and Mary L. Rollins. *Text. Res. J.*, 1950, **20**, No. 9, 620-630. A method is described for comparing microscopically the cross-sectional areas of the same cotton fibre in wet and dry conditions, for evaluation of swelling. Cottons of different varieties have been tested, including mature and immature fibres. Samples of raw flax, viscose staple fibre, nylon, and Fortisan were used for comparative purposes. The results (including several photomicrographs) are presented and discussed. C—9.

Electrical Conduction: Suggested Uniform Nomenclature. D. Stewart. *Elect. Rev.*, 1950, **147**, No. 3814, 1095-1096. Some suggestions are made for the standardisation of nomenclature used in connection with the conduction of electricity and some proposed terms are introduced. C—9.

Heat Transfer and Pressure Drop in Annuli. J. G. Knudsen and D. L. Katz. *Chem. Engng. Progress*, 1950, **46**, No. 10, 490-500. Experiments have been carried out with a heat exchanger consisting of a clear plastic outer tube and a copper plain or finned inner tube. Hot water was circulated through the inner tube and cold water through the annulus. Heat transfer and pressure drop measurements have been made on one plain and six fin tubes 9 feet long in the range of Reynolds numbers from 1,000 to 70,000 in the annulus. The mechanism of water flow between the fins was observed by injecting Methylene Blue dye into the water stream. The data are presented and discussed. C—9.

Höppler Consistometer: Determination of Plasticity of Clays. R. Ahlberg. *Festskr. J. A. Hedvall*, 1948, 1-12 (through *Brit. Chem. Abstr.*, **C**, 1950, Part 10, 401). The determination of the plasticity of clays by means of the Höppler consistometer is described. The steel ball which normally falls freely through the test material, is in this case forced through. C—9.

Native Cellulose: Specific Volume. A. J. Stamm. *Text. Res. J.*, 1950, 20, No. 9, 631-636. Specific-volume measurements of native cellulose determined in different media and calculated from X-ray data are compared. Data for the specific volume of cellulose containing different amounts of water measured in a benzene medium are analysed. By making certain assumptions, reasonable compression values are obtained that are in accord with the concept of hydrogen bonding of water and other findings. (From Author's abstract.) C—9.

Nutting Equation: Rheological Basis. G. W. Scott Blair and M. Reiner. *Appl. Sci. Res.*, 1950, **A2**, No. 3, 225-234. It is shown that by eliminating time from the Nutting equation, $\psi = S^{\beta}\sigma^{-1}t^{k}$ (where S is stress, σ strain, t time, and ψ, β, and k are constants), this can be given in a form in which both stress and strain may vary. This permits pre-straining before application of stress to be taken into account. C—9.

Nylon Fibres: Use in Production of Fine Metal Tubes. R. J. E. Gezelius. *Rev. Sci. Instrum.*, 1950, 21, No. 10, 886. Small metal tubes with inside diameters as small as 0·05 mm. have been made by electrodeposition of the metal on to suitable nylon fibres. C—9.

Paint Pigments: Electron Microscopical Study. H. S. Davidson. *Offic. Digest Fed. Paint Varn. Prod. Clubs*, 1950, No. 309, 753-766. The application of microscopic techniques to the study of the characteristics of paint pigments is briefly discussed and the use of the light and the electron microscopes for this purpose is considered. Following this introduction, some factors influencing certain properties of pigments are discussed, including the effects of variation of particle size, shape, and size distribution on opacity, tinting strength, oil absorption, and resistance to photochemical change. Electron micrographs of pigments are used to illustrate the effects. C—9.

Phase-contrast Microscopy. ("Phasenkontrast-Mikroskopie.") H. Reumuth. *Koll. Zschr.*, 1949, 115, Nos. 1-3, 44-53. After briefly defining the basic principles of phase-contrast microscopy, the paper goes on to describe the apparatus, the possibilities of the method and its scope (which includes the structure of soap and of fibres), and some of the disadvantages, the principal ones being the great accuracy required in aligning the components of the apparatus, the necessity for very thin sections, and preliminary photographic difficulties. The author advocates the adoption of the method in textile technology and research. C—9.

Polymeric Materials: Permeability of Films to Gases. V. L. Simril and A. Hershberger. *Modern Plastics*, 1950, 27, No. 11, 95-102 (5 pages). The permeabilities of twenty-one films of polymeric materials to oxygen, hydrogen, carbon dioxide, nitrogen, ammonia, hydrogen sulphide, and sulphur dioxide, both dry and moist, have been studied. The film materials included regenerated cellulose (by viscose process) and nylon. Data are presented in terms of a permeability constant P', and interpreted in terms of the structures and physical properties of the films and the gases. C—9.

Polymeric Materials: Permeability of Films to Organic Vapours. V. L. Simril and A. Hershberger. *Modern Plastics*, 1950, 27, No. 10, 97-102, 150-158 (9 pages). The permeabilities of sixteen films of polymeric substances, including nylon, cellulose acetate, and regenerated cellulose (viscose process), to organic vapours, are reported in terms of a permeability constant P'. The effects on permeation rates of film and vapour structure and properties are discussed and related to the general theory of permeation advanced previously by other workers. The effects of temperature and film thickness are also discussed in the light of polymer and vapour characteristics. The experimental procedure employed to obtain the permeability data is described. C—9.

Radiation Heating of a Plane Parallel Slab: Theory. W. E. Danforth. *J. Franklin Inst.*, 1950, 250, No. 2, 146-150. A simplified mathematical treatment is given of heat transfer in a vacuum. A problem is considered where a heater of emissivity e_1, is maintained at a temperature T_1. The slab being heated has

emissivity and equilibrium temperature e_2 and T_2 on its inner surface and e_3 and T_3 on its outer surface. The equation is developed which relates the three temperatures in terms of the three emissivities. C—9.

Resistance Strain Gauges. T. B. Sansom. *Elect. Rev.*, 1951, **148**, No. 3815, 3-7. The application of the A.C. bridge to the measurement of variable strains by means of electrical strain gauges is discussed. C—9.

Slender Beams: Stability and Strength. A. R. Flint. *Engineering*, 1950, **170**, No. 4430, 545-549. Some tests have been carried out to check existing theories on the behaviour of slender beams under point loads. A mathematical analysis of the problem is developed. C—9.

Small Length Changes: Mechanical Measurement. G. Leibfried. *Z. Physik*, 1950, **127**, 580-587 (through *Amer. Chem. Abstr.*, 1950, **44**, No. 19, 8702[2]). An apparatus is described which makes possible the measurement of the plastic elongation of metallic wires over a range of 0·04 mm. to an accuracy of 10 A. C—9.

Static Charges on Dielectrics. B. Gross. *Brit. J. Appl. Phys.*, 1950, **1**, No. 10, 259-267. The author has previously shown[1] that the permanent "homo" charge (of the same sign as the electrode) on electrets arises from a transfer of charge from electrode to dielectric surface, often by discharges. Using the method of the demountable capacitor, this discharge process of charge transfer has been investigated on polystyrene. A quantitative explanation has been given of the variation of the charges on the electrode and on the dielectric surface when the voltage is varied in steps, in cycles, continuously and alternating. ([1]See *J. Textile Institute*, 1950, **41**, A166.) C—9.

Textile Fibres: Swelling. W. W. Barkas. *Text. Merc.*, 1950, **123**, No. 3220, 1017-1018; *Dyer*, 1950, **104**, No. 13, 623. A summary is given of a paper on the swelling behaviour of textile fibres. Two types of swelling action, namely, molecular and capillary sorption, are distinguished and discussed with respect to wood fibres as well as textile fibres. C—9.

Three-Dimensional Compressible Viscous Flow: Mathematical Treatment. M. Z. Krzywoblocki. *J. Franklin Inst.*, 1950, **250**, No. 3, 213-217. An asymptotic expansion proposed by Goldstein[1] for two-dimensional incompressible viscous flow has been extended to a case of a three-dimensional flow of a compressible liquid. ([1]*J. Textile Institute*, 1934, **25**, A150.) C—9.

Water Drops: Sliding on Surfaces of Different Roughness. J. J. Bikerman. *J. Colloid Sci.*, 1950, **5**, No. 4, 349-359. An investigation has been made of the effect of surface roughness on the sliding of water drops. The sliding behaviour of drops on six stainless steel plates of different degrees of roughness has been observed. The experimental procedure is described and the results are presented and discussed. Some earlier work on friction between solids and liquids is examined. C—9.

X-Ray Investigation of the Crystalline Constituent of Cellulose. ("Der kristalline Anteil in natwen und regenerierten Zellulosefasern aus Röntgenstreuungsuntersuchungen.") P. H. Hermans. *Koll. Zschr.*, 1949, **115**, Nos. 1-3, 103-112. It is difficult to define clearly what constitutes the crystalline constituent of a high polymer as it appears that crystallinity exists only over submicroscopic dimensions, the local regular arrangement of molecules gradually being transformed to an amorphous form on all sides of the crystalline centre. References are made to the chemical and physical methods for determining quantitatively the crystalline content of cellulose, and these are followed by an explanation of the principle of measurement by X-ray intensity. Results obtained by subjecting natural and regenerated celluloses to X-radiations are presented and discussed. C—9.

X-Ray Spectrography: Use of Aluminium Crystals for Focusing. ("Sur l'Emploi de Monocristaux d'Aluminium dans les Techniques de Focalisation, en particulier dans la Spectrographie X.") Mlle. Y. Cauchois, T. J. Tiedema, and W. G. Burgers. *Acta Crystall.*, 1950, **3**, September, 372-374. Specially prepared single crystals of aluminium have been used as reflectors in focusing X-ray spectrographs and spectrometers, both of the transmission and the reflecting type. C—9.

Automatic Computing Engine. Anon. *Elect. Rev.*, 1950, **147**, No. 3811, 919-920; *Engineer*, 1950, **190**, No. 4950, 560. A brief description of the pilot model of the automatic computing engine (ACE), constructed at the National Physical Laboratory, is given. **C—9.**

Factorial Experiments: Fractional Replication. K. S. Banerjee. *Sankhyā*, 1950, **10**, Parts 1 and 2, 87-94. The author shows that it is feasible to consider a three-fourth replicate in addition to the half, quarter, and eighth replicates introduced by Finney. The algebraic calculations are not as simple as in the cases treated by Finney, but can be simplified sufficiently to be practicable. **C—9.**

Factorial Experiments: Fractional Replication. C. R. Rao. *Sankhyā*, 1950, **10**, Parts 1 and 2, 81-86. The general theory of fractional replicated designs is developed and its relation to the general theory of compounded designs is indicated. **C—9.**

Layout of Field Experiments: Valid Restriction of Randomisation. J. Taylor. *J. Agric. Sci.*, 1949, **39**, Part 4, 303-308. Two examples are given of field trials for which randomised blocks would seem the most suitable design, but in which special considerations of the future of the trial or the nature of the treatments make complete randomisation impossible or impracticable. A type of design which takes account of these difficulties is described, together with the appropriate methods of analysis. **C—9.**

Lines of Best Fit: Problems in Organic Correlation and Allometry. K. A. Kermack and J. B. S. Haldane. *Biometrika*, 1950, **37**, Parts 1 and 2, 30-41. In studies on organic correlation the conventionally used regression lines are unsuitable because the terms "dependent" and "independent" variable have no meaning. The major axis of the distribution of two variates expressed in standard measure has been suggested as a suitable line. The authors derive the sampling distributions of the parameters of this line, and show also how the method can be used when the variates are subjected to logarithmic transformation. An illustrative example is given. **C—9.**

Mean Range: Use as Estimator of Variance in Statistical Tests. P. B. Patnaik. *Biometrika*, 1950, **37**, Parts 1 and 2, 78-87. An approximation to the distribution of the mean range is obtained and used to derive the distribution of the ratio of a normal variate to mean range. The results are compared with those obtained by Lord in a numerical investigation[1] and show good agreement. An approximate distribution of an individual range to mean range is also obtained and its application to the analysis of variance considered. ([1]*Biometrika*, 1947, **34**, 41; see Abstract below.) **C—9.**

Modified *t*-Test: Power of Test. E. Lord. *Biometrika*, 1950, **37**, Parts 1 and 2, 64-77. In a previous paper[1] a modified form of *t*-test was derived which used an estimate of the standard deviation based on the range instead of the root-mean-square estimate. Such a test is necessarily less powerful than the conventional *t*-test. The present paper justifies the value of the test by showing that the reduction in accuracy is negligible for all practicable purposes, and is often compensated by the greater ease of computation. ([1]*Biometrika*, 1947, **34**, 41.) **C—9.**

Mechanical Computing: Handling Algebraic Signs on the Hollerith Multiplier. A. Matthai. *Sankhyā*, 1950, **10**, Parts 1 and 2, 124-126. On the Hollerith Multiplying Punch there is no provision for the signs of the factors. The author describes two methods, using certain particular designations and some additional plugging, whereby the signs can be shown. **C—9.**

Range: Some Notes on Its Use. E. S. Pearson. *Biometrika*, 1950, **37**, Part 1 and 2, 88-92. Two possible objections to the use of range instead of root-mean-square in significance tests are considered. They are that non-normality will affect the range test more than the *t*-test, and that the presence of "rogue" observations in the sample will upset the range more than the root-mean-square estimate. The author finds that these objections carry little weight provided that groups of not more than about ten observations are taken. **C—9.**

Straight Beam Differential Equation: Solution. S. F. Borg. *J. Franklin Inst.*, 1950, **250**, No. 3, 249-256. Two separate mathematical methods are given for the solution of the Bernoulli-Euler differential equation for a transversely loaded straight beam. **C—9.**

Systematic Sampling: Two Dimensional Case. A. C. Das. *Sankhyā*, 1950, **10**, Parts 1 and 2, 95-108. A type of systematic sampling for the two dimensional case is developed, and its efficiency relative to the associated random and stratified sampling schemes is found. The set of sufficient conditions under which systematic sampling is more efficient than random sampling is obtained. C—**9.**

***t*-Distribution: Table of the Probability Integral.** H. O. Hartley and E. S. Pearson. *Biometrika*, 1950, **37**, Parts 1 and 2, 168-172. A new table has been computed which extends "Student's" table to a finer interval and higher accuracy. C—**9.**

Textile Design: An Enumeration Problem. Part III. S. A. Shorter. *J. Textile Inst.*, 1950, **41**, No. 9, T333-348. The treatment of formal textile design as an enumeration problem in mathematics is continued. A routine is devised whereby the designs of any period may be specified in a systematic manner, without omission or repetition. Six rules defining the routine are enunciated and the application of these rules is illustrated by examples. Results are given for the detailed enumeration of the elementary designs of periods 2 to 8 inclusive. In addition, a routine is derived for abbreviating the results of this enumeration, in such a way that only the primitive patterns are specified, with indications of how many designs correspond to each primitive pattern, and how they are derived from it. (For Part II, see *J. Textile Institute*, 1950, **41**, A120.) C—**9.**

Time Series: Periodogram Analysis and Continuous Spectra. M. S. Bartlett. *Biometrika*, 1950, **37**, Parts 1 and 2, 1-16. The problem of investigating periodicity in time series is considered in the light of theoretical developements in the harmonic analysis of stationary stochastic processes. A proposed method of smoothing the periodogram, making use of the correlogram, is tested arithmetically on three series. These empirical tests supplement a theoretical discussion of the asymptotic properties of the method. C—**9.**

Two-dimensional Space Distributions: Randomness. R. C. Bose. *Sankhyā*, 1950, **10**, Parts 1 and 2, 13-28. The author considers a problem which arises in the theory of sample surveys. It is that of determining whether a given space distribution is random or patterned, the criterion used being the number of "patches" of a given kind in a rectangular lattice. A number of topological and probability theorems connected with the "patch" distributions are proved. C—**9.**

Time Study Research. III. Secondary Adjustments. M. E. Mundell. *Time Study Engr*, 1950, **5**, No. 12, 389-394. (To be continued.) A method is described of making secondary adjustments for job difficulty after rating, instead of before, as in the usual method. It is claimed that this reversal makes greater accuracy in rating possible. A table of six bodily elements is given, with per cent. adjustments for scaled values, which, added to the rating, give a "base time". Additional allowances have to be made to make this "base time" represent the "allowed time", that is standard time on an all-day basis. These allowances will be discussed in Part IV. (See also Abstract, C.1951/882.) C—**9.**

Three-watch Method of Timing. D. Gerhold. *Time Study Engr*, 1950, **5**, No. 9, 300-302. An apparatus is described, incorporating a time study sheet and three stop watches operated simultaneously by a single key. If the watches are set initially at the zero, stopped, and running positions respectively, each watch in turn will record the duration of a series of operations, enabling the timing to be read accurately from a stationary hand. C—**9.**

Triangular Machine Layout. ("Maschinenaufstellung nach dem Dreieckverfahren.") W. Bloch. *Industrielle Organisation* (*Zurich*), 1950, **19**, No. 5, 305-308 (through *Management Abstr.*, 1950, **3**, No. 9, 362). If machines are arranged in an equilateral triangle, there will be three paths of equal length between three machines. It is therefore suggested that triangular layout makes possible a kind of flow production in small scale manufacture. C—**9.**

Utility Clothing Production Statistics. *Hansard*, 1950, **481**, No. 24, Written Answers, 182-184. Tables are given showing the present annual production rate of the principal types of Utility goods as compared with 1949, and the production rate of Utility goods as a percentage of total supplies for home civilian consumption. C—**9.**

Wage Incentives: Two Case Studies. I. M. Kanghan and T. J. Simonds. II. E. J. Moran and N. K. Waldren. *Bull. Industr. Psychol.* (Melbourne), 1950, **6**, No. 2, 2-16, 17-27 (through *Management Abstr.*, 1950, **3**, No. 10, 408-411). In both case studies emphasis is given to the preliminary information work necessary to explain incentive plans to employees and to get willing consent to their introduction. In the first case a bonus was paid to each employee for production in excess of an agreed standard. In the second a group bonus was given, as an alternative to a straight wage increase, to increase earnings without increasing unit labour cost. The management believe that the plan has discouraged casual absence. **C—9.**

Wool: Measurement of the "Whiteness", especially in the Loose State. H. J. Selling. *J. Textile Institute*, 1951, **42**, P44-45. An equation is given for the departure from whiteness of an almost white surface based on colorimetric measurements. The computation of the difference from the specification on the C.I.E. system will be discussed in a future publication. The difficulties in measurement of the reflection factor of a loose mass of wool are discussed, and a method is suggested for overcoming these by the use of nylon threads. **W—9.**

Ether Extracts: A Rapid Method of Determining. J. C. Dickinson and R. C. Palmer. *J. Textile Institute*, 1951, **42**, T6-14. The extraction of worsted oils is carried out by pouring solvent down a column of wool and the solvent is evaporated in an open aluminium tray. The test can be carried out and a result calculated in 15 minutes. Only an electricity supply and balance are required. Details are given of several experiments designed to ascertain the optimum conditions. Results for the new method compare favourably with the Soxhlet method. The new method is not suitable for determination of the subsequent alcohol extract, nor is it suitable for woollen oils. With woollen oils it gives results up to 1 per cent. (on the weight of the wool) low. **W—9.**

The Australian Carpet Beetle, *Anthrenocerus australis*, Hope (*Coleoptera, Dermestidæ-Anthrenini*) in the Netherlands. A. D. J. Meeuse. *Entomologische Berichten*, 1950, **13**, 161-162. The Australian carpet beetle (*Anthrenocerus australis*, Hope) has been identified in Holland. It has probably been shipped in wool warp yarns from England, and may be the first record of this species on the Continent. **W—9.**

Extra-Corticle Membranes and Layers of the Wool Fibre. P. F. Mariner. *Nature*, 1951, **167**, 231-2. By prolonging the treatment of wool fibres with both peracetic acid and ammonia, further evidence regarding the structure of the outer layers of the wool fibre has been obtained. The insoluble part consisted of membranes, and, in a few cases, it was possible to separate, with the help of micromanipulators, a very transparent sheath from the comparatively bulky major membrane. Examination in the phase-contrast miscroscope revealed that on the original major membrane there was no appearance of scales, yet the thin epicuticle membrane showed definite scale-shaped marks. The results are compared with those of other workers in this field, and it is considered that, below the epicuticle and above the sub-cuticle membrane, there is some material possessing considerable birefringence and which appears to constitute part of the scales. **W—9.**

Wool: The Membrane of the Allwörden Sacs as a Structural Element of. G. J. Schuringa and L. Algera. *Biochim. Biophys. Acta*, 1950, **6**, 325-333. Thin membranes as described by Lindberg and others (*J. Textile Institute*, 1948, **39**, A575) have been obtained by treating wool with sodium sulphide, sodium hypochlorite and saturated bromine water. These membranes, and not the "epidermis membrane" or "subcutis" form the skin of the Allwörden sac. It is proposed that the scale layer of the hair should be called "epidermis" and the membrane should be called "cuticle". **W—9.**

10—ECONOMICS

Brazilian Rayon Industry: Review. ("A indústria brasileira do rayon.") Anon. *Industria text.*, 1950, **19**, June, 28-31. A brief review is given of the rapid growth of rayon production in Brazil and includes output figures for the years 1935-1951 (1950 and 1951 being estimated). **C—10.**

British Cotton Industry: "Taking Stock". Anon. *Text. Wkly*, 1950, **46**, No. 1185, 1456, 1458. A brief report is given of a broadcast in the "Taking Stock" series devoted to the British cotton industry. The subjects dealt with by the six speakers were manpower and recruitment, mechanisation and re-equipment, redeployment, raw materials, export problems, and the future outlook for cotton. C—**10.**

British Textiles: Selling to America. British Textile Marketing Mission. *Text. Merc.*, 1950, **123**, No. 3218, 919-921, 943; *Text. Wkly*, 1950, **46**, No. 1186, 1506, 1508; *Board of Trade J.*, 1950, **159**, No. 2815, 897-898. Extracts are given from a report on the marketing of cotton, rayon, silk, and furnishing fabrics in the U.S.A., which examine the prospects for British goods in this market. C—**10.**

Egyptian Cotton Marketing Methods. ("Comment fonctionne le Marché du Coton Égyptien?") Anon. *L'information textile*, 1950, June, 1-3. The systems of marketing cotton in Egypt and Government methods of control are described in a general manner. C—**10.**

Linen Industry Problems. ("Les problèmes de l'industrie du lin.") C. Roches. *Industrie text.*, 1950, **67**, 237-239; 295-299. This survey of the linen industry in France discusses the higher cost of linen compared with cotton and examines the production processes with a view to devising a more economical procedure from retting through to the finished cloth. C—**10.**

Plastics: Economic Value to Manufacturers. Anon. *Modern Plastics*, 1949, **27**, No. 1, 75-78. The advantages of plastics over other materials for manufacturing purposes are considered from the economic point of view. Values of physical strengths, densities and costs (in the U.S.A.), and the ratios between these values are tabulated for plastics and other materials of construction. Charts show (*a*) cost per pound, (*b*) index numbers of wholesale prices, and (*c*) cost per cubic inch of plastics and other industrial raw materials. C—**10.**

"Productivity Measurement in British Industry." Anglo-American Council on Productivity. *Text. Wkly*, 1950, **46**, No. 1185, 1466, 1468. Brief summaries are given of articles appearing in a symposium of the above title. C—**10.**

Raw Cotton: World Situation. Anon. *Rayon Org.*, 1950, **21**, No. 10, 150-159. The raw cotton situation is first discussed from the world point of view, including international trade. Following this, the status of United States cotton is considered both in that country and in the world, with special attention to the various government control programmes. Figures are given showing the world production, consumption, export and carry-over of raw cotton for the seasons from 1934 to 1950. C—**10.**

Rayon and Synthetic Fibres: Review. (1) R. C. Scott, (2) C. W. Bendigo. *Text. World*, 1950, **100**, September, 89-105. (1) An economic survey is made of the position of rayon and synthetic fibres during 1950, with particular reference to the American industry. (1) Developments in established man-made fibres and of new synthetic fibres are reviewed. After an introduction, in which a list of American producers of artificial fibres (together with their products) is given, various aspects of the following are covered briefly: du Pont Orlon and Fiber V, Celanese cellulose acetate rayon, and "Celcos" (brief details of the research laboratories at Summit, New Jersey, being given), Avisco, Dynel, SRRL (pea-nut protein fibre), and Fiberglas. C—**10.**

Rayon and Synthetic Textiles: U.K. Export Trade: Part III. Anon. *Brit. Rayon & Silk J.*, 1950, **27**, October, 144, 146. Prospects for the future in the rayon and synthetic textiles export trade of the United Kingdom are discussed. C—**10.**

South American Cotton: 1949-1950 Production. Anon. *Text. Rec.*, 1950, **68**, October, 194. The 1949–1950 season production of cotton in South America is reviewed. Adverse weather has affected the crops in Brazil, Peru, and Argentina. C—**10.**

Textile Production: Trends in World Trade. Anon. *Text. Wkly*, 1950, **46**, No. 1184, 1396-1398. Recent trends in the world trade in textiles are briefly reviewed. Some relevant data are given, including indices of production for 20 countries for the years 1947 to 1949 (based on 1938 and 1948 production). C—**10.**

Australian Cotton Industry. Anon. *Text. Wkly*, 1950, **46**, No. 1186, 1510. A brief report is given of the present state of the Australian cotton industry. Figures are given to show the production and consumption of cotton goods (1948, 1949, 1950), and the production of cotton yarn (1949, 1950). The present production of cotton textiles is well below domestic demand. C—**10.**

Australian Rayon Imports: Effect of Higher Rayon Duties. Anon. *Times Rev. Ind.*, 1950, **4**, September, 68. Comment is made on the recent increases in rayon import duties made by the Australian Government; it is felt that they will have a serious effect on British exports of rayon materials to Australia. C—**10.**

British Rayon Fabrics: Export Demands. Anon. *Times Rev. Ind.*, 1950, **4**, October, 63. There is a strong export demand for British rayon fabrics, but the present supply can meet the demand only with difficulty. It is hoped that the opening of a new factory for the production of rayon filament yarn will help to ease the situation. Some general observations are made on the present state of trade in rayon and rayon materials. C—**10.**

Cotton Growing in America: Acreage Allotments and Marketing Quotas. P. K. Norris. *Egypt. Cotton Gaz.*, 1950, **10**, May, 13-16. In October, 1949, after a break since 1943, a programme of acreage allotments and marketing quotas was re-established for American cotton growers. The scheme and its implications are briefly discussed. C—**10.**

Cotton Situation in the U.S.A. E. S. Bonner. *Egypt Cotton Gaz.*, 1950, **10**, May, 17-20. The cotton situation in the United States for the 1949-50 season is briefly reviewed. Figures are given for the supply and distribution of all cottons in the U.S. over the periods 1938-47, 1948-49, and 1949-50. C—**10.**

Distribution of Textiles. Lord Hollenden. *J. Textile Institute*, 1950, **41**, No. 9, P701-706. Some problems in the distribution of manufactured textile goods are discussed. These include the creation of demand, purchase tax, standardisation and simplification (for example, in the branding of goods), and "education" of the consumer. C—**10.**

Egyptian Cotton: Statistical Position, May, 1950. R. Dabbous. *Egypt. Cotton Gaz.*, 1950, **10**, May, 81-89. The supply position of Egyptian cotton as on 1st May, 1950, is reviewed. The survey deals with production of long, medium, and short staple cottons, exports to the leading customers (India, France, and U.K.), domestic consumption, and prospects for new crops. Forty tables of statistical data are given (*ibid*, 90-129) covering Egyptian stocks, quotations on "futures" and "spot" markets, crop forecasts, acreages under cotton, and domestic consumption, production and exports of Egyptian cotton. C—**10.**

Japanese Cotton Industry: Prospects for Increase of Equipment. All Japan Cotton Spinners Association. *Mthly Rep. Japanese Cotton Spinning Ind.*, 1950, No. 44, 1-9. The possible demand (both home and foreign) for Japanese cotton textiles in 1953 is examined, together with the prospects of increasing the present quantity of equipment to the level required to meet the forecast demands. C—**10.**

Lancashire Cotton Goods: State of Market. Anon. *Times Rev. Ind.*, 1950, **4**, October, 54. Some observations are made on the state of the market for Lancashire cotton goods. Although a sellers' market is rapidly establishing itself, exports of cotton cloth over the past few months have shown no improvement. C—**10.**

Lancashire Cotton Industry: Present Situation. Anon. *Times Rev. Ind.*, 1950, **4**, September, 54. Some observations are made on the state of the Lancashire cotton textile industry (September 1950). The effects of the change (in July) of the Raw Cotton Commission's procedure for notification of selling prices, and of the 5 per cent. rise in converter's ceiling price for Utility cotton cloth are indicated. Mention is also made of the trend of output of yarn and fabrics. C—**10.**

Productivity: Management's Approach. J. J. Gracie. *Engineering*, 1950, **170**, No. 4431, 561-562. Three ways of increasing national output are considered: working longer hours, putting more people to work, and obtaining greater productivity. The policy of the management in fostering the last-mentioned by means of improved relations between management and workers is discussed briefly. C—**10.**

Raw Cotton and Cotton Textile Situation in U.K., 1949-50. D. Windel. *Egypt. Cotton Gaz.*, 1950, **10**, May, 53-57. The raw cotton and cotton textile situation in the U.K. for the 1949-50 season up to the end of the first quarter of 1950, is reviewed. Tables are given showing imports of raw cotton, consumption of raw cotton, machine activity and production (spinning and weaving), and exports of cotton yarns and fabrics. Figures are also given for the production of rayon continuous filament yarn and staple fibre. **C—10.**

Rayon Yarn: Supply and Demand in Britain. Anon. *Times Rev. Ind.*, 1950, 4, September, 63. Comment is made on the prospects of the British rayon industry being able to meet the ever-increasing demands made on it. **C—10.**

World Raw Cotton Situation: 1948-49 Season. D. Windel. *Emp. Cotton Growing Rev.*, 1950, **27**, No. 3, 195-201. A survey is made of developments in the world raw cotton situation during the 1948-49 season. Figures are given for supply and distribution, carry-over and production, and consumption of raw cotton for the whole world. Details of the crops in the various cotton-growing countries are summarised. **C—10.**

Nylon Hosiery: Exports. *Hosiery Times*, 1951, **24**, (262), 74. Exports of nylon hose (excluding parcel post) during 1950 totalled 1,792,729 dozen pairs, against 914,601 dozen pairs in 1949. Details of fully-fashioned and seamless exports, by country, are given. **H—10.**

11—INDUSTRIAL WELFARE, INDUSTRIAL PSYCHOLOGY AND EDUCATION

Hydrogen Sulphide in the Atmosphere: Permissible Tolerance. L. F. Glebova. *Gigiena i Sanit.*, 1950, No. 4, 19-21 (through *Amer. Chem. Abstr.*, 1950, **44**, 8574[b]). Children kept in nurseries associated with viscose plants showed typical sulphide-intoxication symptoms caused by the carry-over of toxic materials by the mothers' clothing. **C—11.**

Research in Industry. M. P. O'Brien. *News Ed. Amer. Chem. Soc.*, 1950, **28**, No. 44, 3764-3765. After briefly discussing the question of what "research" is, the author gives advice for the benefit of the industrial organisation wishing to establish a programme of research work. **C—11.**

Technological Education. Political and Economic Planning (PEP). *Planning*, 1950, **17**, No. 319, 61-80. This is a review dealing with (1) ways of meeting the need for technologists, (2) technological education systems abroad, (3) the present system in Britain, and (4) past discussions and present plans. **C—11.**

Accident Proneness. M. Greenwood. *Biometrika*, 1950, **37**, Parts 1 and 2, 24-29. A survey is given, of the various theories of accident proneness, and of the possibilities of measuring accident proneness by performance in specially designed tests. **C—11.**

Air Disinfection and Sterilization. Society of Chemical Industry. *Chem. & Ind.*, 1950, No. 50, 805-807. Summaries are given of papers presented in a symposium on "Air Disinfection and Sterilization": (*a*) Methods of sampling air for bacteria. (*b*) Air disinfection by ultra-violet irradiation and chemical vapours. (*c*) Removal of bacteria from air by filtration. (*d*) Industrial and large scale purification of air supplies (with special reference to the electrostatic precipitator). (*e*) Ultra-violet irradiation of air supplies. **C—11.**

Atmospheric Pollution: Effects of "Inert" Dusts. A. J. Vorwald. *Arch. Industr. Hyg. Occupational Med.*, 1950, **2**, August, 140-143 (through *Atm. Poll. Abstr.*, 1950, **18**, No. 6, 30). The effects of so-called inert dusts depend on many factors, such as size and chemical composition, which may be affected by changes in the industrial process. The dust may act as a carrier for other substances, or agglutinate or coat otherwise toxic substances. These and other factors are considered, and anatomical changes due to dust occurring are outlined. **C—11.**

Barrier Creams in Prevention of Industrial Dermatitis: Evaluation. Sibyl Horner. *Practitioner*, 1950, **164**, No. 981, 234-241 (through *Bull. Hyg.*, 1950, **25**, No. 8, 817). The functions and types of barrier creams are discussed and recent British work on their evaluation is reviewed. Examples of typical formulæ are given, and industries and processes in which barrier creams are required by law are indicated. **C—11.**

A French Cotton Research Institution. L'Institut Français de Recherches du Coton et des Textiles Exotiques. *Egypt. Cotton Gaz.*, 1950, **10**, May, 47-52. Details are given of the organisation and functions of the Institut de Recherches du Coton et des Textiles Exotiques (I.R.C.T.) which was founded in 1946 to encourage the production of cotton and other fibres for France in her overseas possessions. The locations and programmes of the research stations of the I.R.C.T. in Africa are indicated. **C—11.**

Manchester College of Technology: Extensions. Anon. *Engineer*, 1950, **190**, No. 4950, 568; *Nature*, 1950, **166**, No. 4233, 1023-1024. A brief description is given of the new laboratories of the Mechanical Engineering Department of the Manchester College of Technology. **C—11.**

Rats: Extermination in Textile Mills. Anon. *Text. Industr.*, 1950, **114**, October, 97-99. The control and extermination of rats in textile mills is discussed. **C—11.**

Machinability Research. Anon. *Machinist*, 1950, **94**, No. 52, 1869-1873. An illustrated account is given of the type of work carried out in the machinability research laboratories of the B.S.A. Group of companies. **C—11.**

Neglect of Science. *Financial Times*, 1948, June 28th, 29th, 30th (through *Management Abstr.*, 1948, **1**, No. 2, 42-43). The need for new developments in industry has not been appreciated by industrialists, with a consequent lack of support for industrial research. It is suggested that scientists and technicians should be given positions of authority in industrial firms, and that to provide suitable material two Institutes of Technology should be founded, with full University status, and demanding high standards. **C—11.**

Noise Reduction in Mills. F. A. Greenwood. *Text. Wkly*, 1950, **46**, No. 1189, 1728, 1730, 1732. The effects of noise, the measurement of the noise output of machines, and the reduction of noise are briefly dealt with. **C—11.**

Printing Industry Research Association. E. Werth. *Business*, **79**, No. 11, 57-62 (through *Management Abstr.*, 1949, **2**, No. 12, 452). The history, organisation and work of PATRA are described. **C—11.**

Research and Industry: Increasing Productivity. Sir H. Harley and D. F. Galloway. *Machinist*, 1951, **95**, No. 3, 95-97. It is pointed out that productivity can be increased by co-operation between industry and the research organisation. This principle is illustrated by reference to an actual example of such co-operation in the engineering industry. **C—11.**

Technological and Technical Education: Development and Expansion. Anon. *Nature*, 1950, **166**, No. 4234, 1043-1045. A critical discussion is presented of the report on the development of higher technological education in Great Britain prepared by the National Advisory Council on Education for Industry and Commerce. **C—11.**

Textile Information Bureau: Abstracting and Library Services at Shirley Institute. J. C. Withers. *Text. Wkly*, 1950, **46**, No. 1186, 1522, 1525, 1526. The collection and presentation of information for the textile industry by means of abstracting and library services is discussed. Special reference is made to the system employed in the information bureau of the Shirley Institute. **C—11.**

Wool Mill: Applied Research. M. W. Townsend. *Text. Rec.*, 1951, **68**, No. 816, 99-102. The use of scientific methods for mill investigations (operational research) is discussed, with particular reference to the work of the Wool Industries Research Association. Investigations are described in connection with the following:—a shortened worsted drawing process; mending worsted pieces, especially the part played by yarn faults, specifically slubs, and the effect of yarn clearing on winding production; the comparative efficiencies of mule and frame spinning for woollen yarns. **W—11.**

Redeployment in the Wool Textile Industry. *Text. Rec.*, 1951, **68**, No. 816, 97-98. The Yorkshire wool trade has been slow to adopt redeployment schemes. This is mainly owing to the preponderance of small firms, but may also be due to misunderstanding of the object of pilot experiments. Benefits are described which have resulted from redeployment in wool textile firms with the aid of consultants. It is suggested that there is scope for the development of group schemes among units producing similar ranges of products. **W—11.**

Wool Manufacturing Research in N.Z. L. F. Story. *Wool*, 1950-51, 1, No. 3, 23, 25, 27. An account is given of the activities of the New Zealand Woollen Mills' Research Association (Inc.). Research projects are described in connection with wool scouring, the effect of shipping on scoured wool, oils for spinning, the effect of hairiness on manufacturing, and the effect of bluestone on manufacturing. W—11.

12—CONFERENCES AND EXHIBITIONS

German Textile Chemists and Colourists: Meeting, April, 1949. ("Bericht über die Tagung der Textilchemiker und-Koloristen in Badenweiler vom 6. bis 9. April, 1949.") H. Zahn. *Koll. Zschr.*, 1949, 114, No. 3, 186-188. The report contains summaries of papers including: the development of textile science; the use of synthetics in the textile industry; the function of capillary-active compounds; substantive dyeing processes; the silicones; cleansing agents in aqueous solution; textile chemistry and physiology; mechanisation of screen-printing; thickening agents for printing inks; changes in cotton on chlorine bleaching; application of the acid-vat process; and micro-methods in fibre research. C—12.

Knitting Machines at the Milan Fair. ("Il macchinario per maglieria esposto alla Fiera di Milans.") Anon. *Riv. Tessile*, 1950, 5, 607-610. Various types of knitting machine on view at the Milan Fair are described and points of particular interest are illustrated by photographs. C—12.

Polymer Chemistry as Applied to Plastics. Anon. *Brit. Plastics*, 1950, 23, October, 135-137. A report is given of a symposium organised by the Plastics and Polymer Group of the Society of Chemical Industry. C—12.

Textile Machinery: Modern Developments. N. M. Mitchell. *Papers Amer. Ass. Text. Tech.*, 1950, 5, September, 162-168. Recent developments in the design of textile machinery are illustrated by means of a review of some of the machinery exhibited at the Atlantic City textile machinery exhibition (1950). C—12.

"Textile Recorder" International Exhibition of Knitting Machinery and Accessories. Anon. *Text. Rec.*, 1950, 68, October, 149-180, 191-192; *Brit. Rayon & Silk J.*, 1950, 27, October, 75-128; *Text. Mfr.*, 1950, 76, 479-502, 506-509. Extensive illustrated reviews are given of the machinery and accessories shown at the above exhibition held in Leicester, October 11-21, 1950. C—12.

American Association for the Advancement of Science: Annual Meeting, 1950. Anon. *Science*, 1950, 112, No. 2919, 670-701. The programme of events for the 117th meeting of the American Association for the Advancement of Science (December 26-30, 1950) is presented, including a complete list of exhibitors at the Annual Science Exposition. C—12.

American Association of Textile Chemists and Colourists: Annual Meeting, 1950. Anon. *Text. Industr.*, 1950, 114, November, 98-103; December, 133, 135, 137; *Text. World*, 1950, 100, December, 128-137 (7 pp.). Summaries are given of papers presented at the above meeting held on September, 28-30, 1950. The papers concerned the processing of cotton, wool, and synthetic fibres, and testing. C—12.

Knitting Machinery: Modern Developments. J. B. Lancashire. *Text. Rec.*, 1950, 68, November, 123-126. An illustrated account is given of the outstanding features of some of the British, American, and Continental knitting machinery exhibited at the *Textile Recorder* Knitting Machinery Exhibition. C—12.

Protein and Nucleic Acid Conference. E. R. Blout and P. M. Doty. *Science*, 1950, 112, No. 2918, 639-643. Brief summaries are given of papers presented at a conference on "Physical Methods in Nucleic Acid and Protein Research", held in the United States. The principal theme was the interaction of radiation with proteins and nucleoproteins, and aspects discussed included electron microscopy, X-ray diffraction, ultra-violet and infra-red spectroscopy, and photochemistry. C—12.

"Rheology and the Constitution of Materials": British Rheologists' Conference. A. G. Ward. *Nature*, 1950, 166, No. 4235, 1106-1107. A report is given of the annual conference of the British Society of Rheology (originally called the British Rheologists' Club) held during September 28-30, 1950. The papers presented are briefly summarised. C—12.

Second Canadian Textile Seminar. Anon. *Text. Industr.*, 1950, **114**, November, 94-97; December, 121-127; *Text. World*, 1950, **100**, December, 139-149 (6 pages). Abstracts of and extracts from some of the papers presented at the second Canadian Textile Seminar (September 15-16, 1950) are given. These cover woollen and worsted manufacture, cotton and man-made fibres and fabrics, knitting, dyeing, and printing, and mill management and engineering. **C—12.**

Southern Textile Exposition: Review of Equipment. Anon. *Text. World*, 1950, **100**, November, 147-169, 236. An illustrated review is given of the textile machinery and accessories exhibited at the Southern Textile Exposition held in Greenville, South Carolina, U.S.A., on October 2-7, 1950. **C—12.**

"Statistical Theory of Solutions": Report of Conference. H. C. Longuet-Higgins, *Nature*, 1951, **167**, No. 4236, 12-14. A report is given of a conference on the "Statistical Theory of Solutions" held in the University of Manchester during September 30 to October 2, 1950. Brief summaries of the papers are presented. **C—12.**

Synthetic Textiles: New Dyes and Finishes. Anon. *Text. World*, 1950, **100**, November, 171, 173, 234. Brief details are given of some of the dyes and other chemical materials, and equipment for use in the dyeing and finishing of synthetic textiles, which were exhibited at the 1950 annual meeting of the American Association of Textile Chemists and Colourists. **C—12.**

Textile Machinery at Netherlands Industries Fair. Anon. *Text. Mfr.*, 1950, **76**, November, 540-541. Some of the textile machinery (looms, a hank winding machine, and knitting machines) shown at the Netherlands Industries Fair, is briefly described. **C—12.**

Correction

J. Textile Institute, 1951, **42**, A83. 6th Abstract.

Nylon Yarn: Treatment. ("Pre-knitting Treatment of Mono-filament Yarn.") A. J. Hall. For *Hosiery Times*, read *Hosiery Trade Journal*.